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SYNOPSIS

OF THE

FAMILIES AND GENERA

OF THE

HYMENOPTERA

OF

AMERICA, NORTH OF MEXICO,

TOGETHER WITH A CATALOGUE OF THE
DESCRIBED SPECIES, AND
BIBLIOGRAPHY.

COMPILED BY E. T. CRESSON.

TRANSACTIONS
AMERICAN ENTOMOLOGICAL SOCIETY.
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1887.

PREFACE.

The study of the Hymenoptera of our country has not kept pace with some of the other orders from the want of an introductory work in our own language. Westwood's invaluable "Introduction to the Modern Classification of Insects," while partly supplying the want, is insufficient, and at the present expensive and difficult to obtain. The want is especially felt by those who have not access to large scientific libraries, and many are discouraged from attempting the study by the difficulties and expense of acquiring the necessary literature, with the added difficulties of the foreign languages.

The writer has been frequently appealed to and requested to indicate such books as will enable a beginner to separate even the families and genera. The impossibility of obtaining any works in the English language, and the almost equally hopeless chance of determining the species, have doubtless deterred many from aiding in the development of the study of probably the most interesting order of insects.

Other extensive orders, as the Coleoptera and Lepidoptera, have numerous votaries from the aids furnished by elementary works on classification, and until similar assistance is given, very little progress can be expected in the study of the Hymenoptera, notwithstanding the fact that there is no order of insects more extensive and varied in structure, and certainly none more interesting in the habits of its members. Students are so few, in fact, that the greater part of the material collected together in the larger families has been very imperfectly studied, and our knowledge of the characters is very incomplete, so that years of careful study will be necessary before a classification can be produced that will be approximately complete.

As a step in that direction, however, it has been suggested that the publication of a series of synoptic tables giving the leading characters, as far as known, of the families and genera, would prove a great aid to the student and possibly induce many to collect and study these interesting creatures.

With the hope that such may prove to be the case, the following tables have been compiled from the writings of Wesmael, Holmgren, Westwood, Thomson, Taschenberg, Norton, Marshall, André, Mayr, Saunders, Howard, Cameron, Ashmead and others. Little or nothing original in the arrangement is claimed by the compiler. The characters given in many cases, especially in the Ichneumonidæ, are very unsatisfactory, often difficult to describe intelligibly, and yet they are about the best that can be offered with our present incomplete knowledge. Doubtless, after more careful study has been made, new and more reliable characters will be discovered, that will make the divisions more easy, simple and correct.

As a rule, only such genera as have been found to occur within our faunal limits are characterized in the synoptic tables given herein, but in some families, e. g. Ichneumonidæ, Braconidæ, Chalcididæ and Proctotrupidæ (our material of which has been so little studied), some of the European genera, not yet recognized with us, but probably will be, are added, and are indicated by an asterisk preceding the name.

As an aid to the student, the synopsis is followed by an approximately complete catalogue of the species that have been described as inhabiting our fauna, closing with a list of works and papers having reference to our Hymenoptera.

In conclusion, the compiler desires to express his thanks to the Rev. T. A. Marshall and Messrs. L. O. Howard, W. H. Ashmead and George B. Cresson, who have most kindly aided in the preparation of this paper; and especially does he feel grateful for the kindness and friendship of Dr. George H. Horn, who has most cheerfully and willingly given largely of his valuable time and much needed information and advice.

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PART 1.

FAMILIES AND GENERA.

SYNOPSIS

OF THE

FAMILIES AND GENERA.

Order HYMENOPTERA.

General Characters.

WINGS four, membranous, the posterior pair almost always smaller than the anterior, with comparatively few nervures.

MOUTH mandibulate, and with a lower lip or tongue, sheathed by the maxillæ.

TARSI generally 5-jointed, rarely 3- or 4-jointed, very rarely heteromerous.

ABDOMEN of the female furnished with a multivalve saw ovipositor, a borer, or a sting.

LARVA vermiform and footless, except in the Phyllophaga and Xylophaga.

PUPA incomplete and inactive.

Before proceeding with the consideration of the different divisions into which the order is separable, it will be well to explain briefly the position of the various parts referred to in the tables characterizing the families and genera. To those who are familiar with the technical terms used in the description of characters no explanation is necessary, but to the beginner the following diagrams and descriptions will be found useful; in the preparation of these the compiler has consulted and freely used Westwood's "Introduction to the Modern Classification of Insects," so replete with interesting and valuable information.

The HEAD (fig. 1, front view) is generally transverse and narrower, rarely wider, than the thorax, and varies greatly in form, being sometimes globose, quadrate or elongate, with all the gradations from one to the other; it is frequently more or less extended behind the eyes; the vertex or crown is the highest part, on which the simple eyes or ocelli (e) are placed, back of it is the occiput; anterior to the ocelli is the front or face upon which the antennæ are inserted, while back of the eyes are the cheeks which are sometimes more or less inflated, and very rarely dentate. The *eyes* (a) are generally large and lateral, naked, rarely pilose, occasionally occupying in the males of certain groups, the greatest portion of the head; they vary much in form and size, being sometimes reniform, ovate or circular, sometimes small or even minute and very rarely wanting; they are accompanied by three small simple *ocelli* (e) placed either in a triangle or in a straight or curved line upon the vertex, but in the apterous females of certain genera of Heterogyna and Mutillidæ these ocelli are entirely wanting, while in some of the Larridæ and Sapygidæ, the posterior pair is distorted and subobsolete; occasionally, as in *Ophion*, they are unusually large and prominent. The *clypeus* (b) is placed on the front, beneath the insertion of the antennæ (f) and is variously formed, usually shield-like, but often narrow and transverse, and sometimes produced into various curious shapes, the apical margin being often denticulate; in the Dorylidæ it is very minute or obsolete. The *mandibles* or jaws (d) are inserted beneath the eyes and on each side of the mouth opening, rarely contiguous at their base; they vary much in form and size, and are simple or more or less dentate on their inner margin and apex, sometimes they are long and sickle-shaped. The *labrum*, or roof of the mouth (c), is variously shaped, transverse, ovate, cuneiform, or rostriform, and is situate in front of the clypeus and between the mandibles, and is often concealed by them. The inner parts of the mouth, which reach the fullest development in the Bees, are, in short, composed of a pair of long membranous or coriaceous maxillæ, each provided with a palpus varying in the number of joints from 1–6, and a lower lip or tongue, having a basal mentum from which proceeds the labium and its

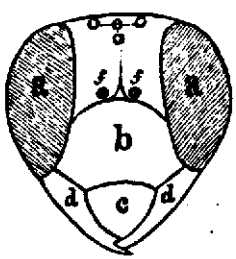

Fig. 1.

a, eyes; b, clypeus; c, labrum; d, mandibles; e, ocelli; f, insertion of antennæ.

palpi with from 1–4 joints, and occasionally with slender filaments or paraglossæ, which vary in length according to the size of the maxillæ.

The ANTENNÆ (fig. 2) vary greatly in structure in the various groups, those of the males are generally longer and more developed than in the females, and often curiously formed; they are inserted (fig. 1, f) usually on the middle of the face, sometimes much lower down close to the clypeus, and rarely far apart. In most of the groups having one-jointed trochanters, these organs are usually filiform and simple, and almost uniformly composed of 13 joints in the males and 12 in the females; while in the ditrocha groups they vary greatly in the number of joints, from 3 to 60, and also in form, being setaceous, filiform, moniliform, clavate, fusiform, furcate, pectinate and flabellate, rarely ciliate with long hairs; they are sometimes elbowed, the *scape* (a) sometimes very long, usually short, ovate or oblong-ovate, rarely strongly dilated and shield-like, the *flagellum* (b) being generally much longer than the scape, from which it is usually separated by a ring-joint or pedicel, which in the Chalcididæ and Proctotrupidæ is often composed of two or three minute joints.

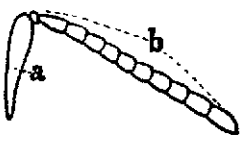

Fig. 2.
a, scape; b, flagellum.

The THORAX (fig. 3, upper portion) generally forms a compact, oval, agglutinate mass, sometimes elongate and subcompressed, higher than wide, as a rule broader than high; in some of the apterous forms of Mutillidæ the segments are soldered together, and in most of the female and worker ants it is elongated and often more or less strangulated and nodose, and sometimes spinose. It is composed of many pieces, but for the purposes of this synopsis the divisions shown in the cut will suffice. The *prothorax* (a), to which the anterior legs are attached, is generally of small size and the portion visible from above is usually termed the collar; the posterior margin is often arched, occasionally angular and sometimes extending back to the *tegulæ* (f) as represented in the figure, thus forming the front of the upper portion of the thorax; it is sometimes elongated into a neck as in some of the Uroceridæ, Stephanidæ, etc., while in certain genera of the Pompilidæ it is almost quadrate and as large or larger than the mesothorax. The *mesothorax* (b) is usually larger and more extensively developed than either the prothorax or metathorax, and is either flattened or more or less convex, sometimes trilobed in front,

the impressed lines between the lobes, termed *parapsidal grooves* or *furrows* (g), are frequently used in characterizing certain genera among the smaller Parasitica. The *scutellum* (c) is generally flat, or simply convex, sometimes square, or scutatiform, or bituberculate, and occasionally armed with spines or teeth; in the Ichneumonidæ it is sometimes pyramidal and often of different color from the rest of the thorax. The *postscutellum* (d) is almost always narrow and inconspicuous, rarely armed with a spine as in *Oxybelus*. The *metathorax* (e) is variously formed, generally short and rounded posteriorly, sometimes elongate and truncate behind, and occasionally bituberculate or bispinose; on each side towards the base is placed a small spiracle, which is either round, oval or linear; the Tenthredinidæ often exhibit two very small white spots (cenchri) at the sides of the extreme basal portion; in the Ichneumonidæ the metathorax is often more or less distinctly areolated. The *pleura* or breast is the lateral portion of the thorax beneath the wings, and is very seldom referred to in characterizing genera.

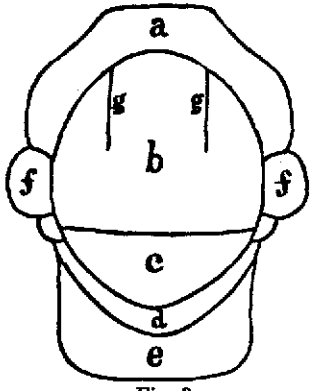

Fig. 3.

a, prothorax; b, mesothorax; c, scutellum; d, postscutellum; e, metathorax; f, tegulæ; g, parapsidal grooves.

The WINGS (fig. 4, anterior; fig. 5, posterior) are four in number, naked, membranous and horizontal; the anterior pair generally much larger than the posterior, the extreme base of the former being protected by a scaly plate, called the *tegula* (fig. 3, f); they are furnished with veins or nervures, for the most part arranged longitudinally and transversely (but never forming a close net-work as in the Neuroptera), the spaces enclosed between the nervures are of various sizes and shapes and are termed *cells* and are fully illustrated and explained in the diagrams given below. In some families, e.g. Chalcididæ and Proctotrupidæ, the number of these veins or nervures is, however, liable to considerable reduction, the wings being almost, or even entirely destitute of them and are often more or less pubescent. In a genus of the last-named family the anterior wings are very long, consisting of a linear branch, dilated and spatulate at tip and ciliate with long hairs; in another genus they are notched at the extremity.

During flight, the anterior and posterior wings are connected by means of a series of minute hooks, or spinulæ (fig. 5, m), along the anterior margin of the posterior pair, which catch the hinder margin of the anterior pair and thus produce one continuous surface on each side. Occasionally the wings are more or less abbreviated, or entirely wanting; apterous forms are found in the families Ichneumonidæ, Braconidæ, Cynipidæ, Chalcididæ, Proctotrupidæ, Formicidæ, and Mutillidæ.

Fig. 4.—Anterior wing of *Mellinus*.

1, costal cell; 2, median or externo-medial cell; 3, submedian or interno-medial cell; 4, anal cell; 5, marginal or radial cell; 6, first submarginal or cubital cell; 7, second submarginal or cubital cell; 8, third submarginal or cubital cell; 9, fourth submarginal or cubital cell; 10, first discoidal cell; 11, second discoidal cell; 12, third discoidal cell; 13, first apical cell; 14, second apical cell; a, costal nervure; b, subcostal nervure; c, externo-medial nervure; d, anal nervure; e, marginal or radial nervure; f, basal nervure; g, first transverso-cubital nervure; h, second transverso-cubital nervure; i, third transverso-cubital nervure; j, transverso-medial nervure; k, discoidal nervure; l, cubital nervure; m, first recurrent nervure; n, second recurrent nervure; o, subdiscoidal nervure; p, stigma; q, posterior margin; r, apical margin.

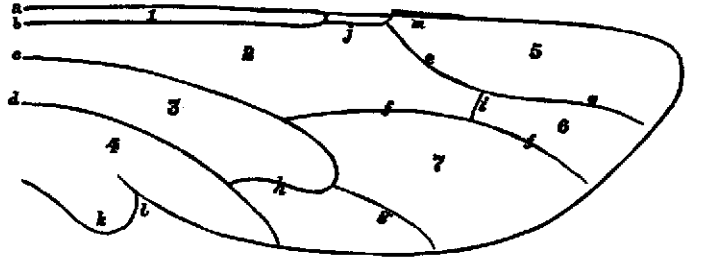

Fig. 5.—Posterior wing.

1, costal cell; 2, median cell; 3, submedian cell; 4, anal cell; 5, marginal or radial cell; 6, submarginal or cubital cell; 7, discoidal cell; a, costal nervure; b, subcostal nervure; c, externo-medial nervure; d, anal nervure; e, marginal or radial nervure; f, cubital nervure; g, discoidal nervure; h, transverso-medial nervure; i, transverso-cubital nervure; j, stigmal region; k, basal lobe; l, sinus; m, spinulæ.

The LEGS (fig. 6) are generally long and slender, often short and robust, pubescent, bristled or spined, sometimes more or less deformed. The first joint, or that by which they are attached to the body, is called the *coxa* (a) and is variously shaped and rarely spined; at the extremity of the coxa and between it and the femur is a small piece, often two-jointed, called the *trochanter* (b), this is usually short and small, although in the ditrocha groups it varies considerably in form and length. The first long piece of the legs is called the thigh or *femur* (c), and following it is the *tibia* (d); at the extremity of the latter are one or two movable spines called *tibial spurs* (e), which are, however, sometimes absent. Following the tibia is a series of joints, generally five in number, constituting the foot or *tarsus* (f), the last joint usually bears two *claws* (g), either simple, toothed or cleft, and often furnished at their base within with a membranous or cushion-like appendage called *pulvillus*, which is occasionally much enlarged and sometimes wanting. These parts of the legs vary greatly in the different families, being fitted either for walking, digging or collecting pollen; in the latter form they are furnished with more or less dense hairs, the tibia and base of tarsus being flattened and dilated; those formed for digging are robust and bristly or spinose. The femur is often robust, and sometimes spined beneath, and in some Chalcids the posterior pair is enormously developed and denticulate beneath; the tibia and tarsus also vary much in structure; in some genera of Proctotrupidæ, the anterior tarsus is terminated by curious large reflexed claws which open and shut somewhat like those of a lobster, while in some of the males of the leaf-cutting bee, *Megachile*, it is broadly dilated and fringed with long hairs; these and other modifications of form are consequent upon diversity of economy.

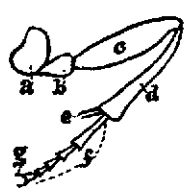

Fig. 6.

a, coxa; b, trochanter; c, femur; d, tibia; e, tibial spurs; f, tarsus; g, tarsal claws.

The ABDOMEN (figs. 7 and 8) is exceedingly variable in the number of its segments, especially in the ditrocha groups, while in the Ants, Wasps and Bees, it is composed of seven segments in the males and six in the females. In form it varies greatly, being ovate, globose, clavate, cylindrical, fusiform, sickle-shaped, knife-shaped, etc., and in some species it is sessile (fig. 7), i.e. connected with the thorax by quite or nearly its entire breadth, and in others petiolate (fig. 8),

i.e. connected with the thorax by a more or less slender petiole or footstalk. The terms "subsessile" and "subpetiolate" are modifications of the sessile and petiolate forms and are characters not only difficult to describe by word or figure, but unsatisfactory and perplexing. In the Heterogyna the petiole is either scale-like or nodose, often binodose, and in the Tubulifera the number of visible abdominal segments is usually reduced to three, the remainder being modified into a slender retractile tube, which is generally concealed. The place of insertion of the abdomen is at the apex of the metathorax, except in the anomalous family Evaniidæ, where it is inserted on the disk or very near the base of that segment. In the Ichneumonidæ the situation of the spiracles on each side of the first segment is frequently used as a character for separating some of the subfamilies. In the females of Hymenoptera the abdomen is furnished with an instrument applied in the different groups as a saw, borer or sting, protected by sheaths and called the ovipositor, which is often more or less exserted, sometimes to a great length in certain genera of Ichneumonidæ.

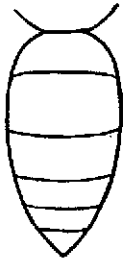

Fig 7.

Fig. 8.

Professor Westwood, in his "Introduction," etc., vol. ii, following chiefly the views of Latreille, divides the Order into two Sections, viz.: TEREBRANTIA and ACULEATA, the former having the abdomen of the females furnished with an instrument employed as a saw or borer for depositing the eggs; and the latter having the abdomen of the females (and workers) armed with a sting connected with a poison reservoir, the antennæ of the males 13-jointed, and of the females 12-jointed.

The TEREBRANTIA is then divided into two subsections, the first, termed the Phytiphaga, having the abdomen sessile, hiding the base of the posterior legs, the larvæ with a well developed mandibulated mouth, feeding upon vegetable matter, and containing the families *Tenthredinidæ* and *Uroceridæ*. The second subsection, the Entomophaga (Pupivora *Latr.*), having the abdomen attached to the thorax by a portion only of its transverse diameter, the larvæ with slightly developed mandibulated trophi, and for the most part feeding

parasitically upon other living insects; this subsection is subdivided into two divisions, the first of which, the Spiculifera, having the abdomen furnished with a plurivalve oviduct and containing the families *Cynipidæ*, *Evaniidæ*, *Ichneumonidæ*, *Braconidæ*, *Chalcididæ* and *Proctotrupidæ*. The second division, termed the Tubulifera, having the extremity of the abdomen tubular and retractile, and furnished with a minute sting, the larvæ feeding upon the larvæ of other hymenoptera, or upon dead or paralized insects deposited by the parents of such larvæ for the support of the latter, and containing the single family *Chrysididæ*.

The second Section—ACULEATA—is divided into two subsections, viz.: Prædones (including the Heterogyna, Fossores and Diplopteryga) having the basal joint of the posterior tarsi cylindrical, not dilated, nor formed for collecting pollen, the larvæ feeding upon other insects stored up, or upon animal or vegetable fluids provided by workers, and containing the families *Crabronidæ*, *Larridæ*, *Bembecidæ*, *Sphecidæ*, *Scoliidæ*, *Mutillidæ*, *Formicidæ* and *Vespidæ*. The second subsection, the Mellifera (Anthophila *Latr.*), having the basal joint of the posterior tarsi dilated and pollinigerous, the larvæ feeding upon honey or pollen paste deposited by the parent, or collected by workers, and containing the families *Andrenidæ* and *Apidæ*.

The arrangement followed in this Synopsis is similar to that proposed by Dr. Hartig (in Wiegmann's Archiv. 1837, No. 2), and agrees somewhat with the above, except that the two principal divisions are founded upon the structure of the trochanters.

The following table will serve to distinguish the different series:

Table of Series.

Trochanters two-jointed.—**Hym. ditrocha.**

Abdomen connate with the thorax.

Anterior tibiæ with two apical spurs ..... **PHYLLOPHAGA.**

Anterior tibiæ with one apical spur ..... **XYLOPHAGA.**

Abdomen sessile or petiolate ..... **PARASITICA.**

Trochanters one-jointed.—**Hym. monotrocha.**

Basal joint of posterior tarsi cylindrical.

Apical segments of abdomen tubular, retractile, telescope-like **TUBULIFERA.**

Apical segments of abdomen not so formed.

Petiole of abdomen with one or more scales or nodes; sexes three ♂ ♀ ☿. **HETEROGYNA.**

Petiole of abdomen simple, without scales or nodes; sexes two, ♂ and ♀.

Wings not folded longitudinally ..... **FOSSORES.**

Wings folded longitudinally in repose ..... **DIPLOPTERYGA.**

Basal joint of posterior tarsi almost always more or less dilated and densely pubescent ..... **ANTHOPHILA.**

The PHYLLOPHAGA contains the family *Tenthredinidæ*, which comprises the insects ordinarily termed Saw-flies, from the construction of the ovipositor, which consists of two saws which are alternately protruded and employed in preparing a place for the reception of the eggs as well as in conducting them to their destination.

The XYLOPHAGA contains the family *Uroceridæ*, distinguished from the preceding by the one-spurred anterior tibiæ, and by the borer-like ovipositor constructed for boring into timber in which the eggs are deposited.

The PARASITICA comprises the families *Cynipidæ*, *Evaniidæ*, *Ichneumonidæ*, *Braconidæ*, *Chalcididæ* and *Proctotrupidæ*, and named on account of the habits of the majority of the species, the larvæ of which are parasitic upon or within the bodies of other insects.

The TUBULIFERA contains the family *Chrysididæ*, distinguished by having the abdomen composed of only three, four or five visible segments, the remainder being transformed into a tubular, retractile, telescopic-formed apparatus which is furnished at the extremity with a minute sting or ovipositor.

The HETEROGYNA comprises the *Formicidæ* and the closely allied families *Poneridæ*, *Dorylidæ* and *Myrmicidæ*, composing the well known and singularly interesting tribe of Ants.

The FOSSORES contains the families *Mutillidæ*, *Scoliidæ*, *Sapygidæ*, *Pompilidæ*, *Sphecidæ*, *Larridæ*, *Nyssonidæ*, *Bembecidæ*, *Philanthidæ*, *Pemphredonidæ* and *Crabronidæ*, comprising the sand and wood wasps.

The DIPLOPTERYGA contains the families *Masaridæ*, *Eumenidæ* and *Vespidæ*, the first two comprising the solitary wasps, composed of males and females only, and the last the social wasps consisting of males, females and workers.

The ANTHOPHILA contains the *Andrenidæ* and *Apidæ*, comprising the extensive and interesting family of Bees.

Table of Families.

Posterior trochanters 2-jointed*..... 2.
Posterior trochanters 1-jointed..... 11.

2.—Abdomen connate, united to the thorax by the entire diameter of the basal part, the articulation not movable..... 3.
Abdomen sessile or petiolate, united to the thorax by a portion only of its transverse diameter, the articulation movable.—**Parasitica**..... 4.

3.—Anterior tibiæ with two apical spurs; abdomen of ♀ furnished at tip with a pair of saws.—**Phyllophaga**..... TENTHREDINIDÆ.
Anterior tibiæ with one apical spur; abdomen of ♀ furnished at tip with a borer.—**Xylophaga**..... UROCERIDÆ.

4.—Anterior wings with several closed cells, or at least a closed or nearly closed marginal or submarginal cell, very rarely without, as in some Evaniidæ and Braconidæ..... 5.
Anterior wings almost veinless, without closed or perfect cells; very rarely with a closed marginal or submarginal cell, as in some genera of Proctotrupidæ..... 10.

5.—Anterior wings with a costal nervure and a more or less developed stigma..6.
Anterior wings without a costal nervure and stigma; abdomen generally ovate and more or less compressed..... CYNIPIDÆ.

6.—Abdomen inserted upon the dorsum or near the base of the metathorax. EVANIIDÆ.
Abdomen attached to the extremity of the metathorax..... 7.

7.—Anterior wings with two recurrent nervures, very rarely with but one.. ..8.
Anterior wings with but one recurrent nervure, very rarely without.....9.

8.—Costal and subcostal nervures separate and distinct, the costal cell therefore present; first submarginal and first discoidal cells separate and distinct. TRIGONALIDÆ.
Costal and subcostal nervures confluent, the costal cell therefore absent; first submarginal and first discoidal cells always confluent. ICHNEUMONIDÆ.

9.—Costal and subcostal nervures separate and distinct, the costal cell therefore present; head globose, vertex tuberculate and rugose.....STEPHANIDÆ.
Costal and subcostal nervures confluent, the costal cell therefore absent. BRACONIDÆ.

10.—Posterior margin of prothorax not reaching the tegulæ; ovipositor issuing before the apex of the abdomen..... CHALCIDIDÆ.
Posterior margin of prothorax reaching the tegulæ; ovipositor issuing from the apex of the abdomen..... PROCTOTRUPIDÆ.

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* In adopting this character (which is not altogether a satisfactory one, being often difficult to distinguish) the compiler has followed after Hartig, Taschenberg, André, etc., without making an examination of the Cynipidæ, Chalcididæ and Proctotrupidæ, in which families exceptions will doubtless be found to occur; these families, however, are readily distinguished from those placed in the next division, by their generally very small size and the fewness of the wing nervures; the Pelecinidæ and Chrysididæ, which also have imperfect neuration, are so well characterized that they cannot be confounded with anything else. In the other families of this division the posterior trochanters are distinctly 2-jointed.

11.—Anterior wings without complete or closed submarginal cells.....12.
Anterior wings with at least one closed and complete submarginal cell...13.

12.—Abdomen petiolate, of ♀ very long and slender, cylindrical, at least five times longer than the head and thorax, much shorter and clavate in ♂; antennæ long, not elbowed, thread-like; body smooth and polished, black. **PELECINIDÆ.**

Abdomen sessile, a little longer than the head and thorax, composed apparently of only 3–5 segments, the remainder modified into a slender, cylindrical, retractile, telescopic-formed apparatus, generally not exserted; antennæ elbowed, short; body adorned with metallic colors, and often coarsely and deeply sculptured.—**Tubulifera**.....**CHRYSIDIDÆ.**

13.—Posterior tarsi with the basal joint more or less cylindrical, never much widened or densely pubescent.....14.
Posterior tarsi with the basal joint more or less compressed and dilated and densely pubescent beneath, rarely subcylindrical.—**Anthophila**.....32.

14.—Petiole of abdomen with one or more scales or nodes; three sexes, ♂ ♀ and ☿.—**Heterogyna**.....15.
Petiole of abdomen simple, without scales or nodes; two sexes, ♂ and ♀...18.

15.—Petiole composed of a single joint.....16.
Petiole composed of two joints.....**MYRMICIDÆ.**

16.—Abdomen proper constricted between segments 1 and 2.....**PONERIDÆ.**
Abdomen proper not constricted between segments 1 and 2.....17.

17.—Insertion of mandibles distant.
Clypeus always distinct and often very large; petiole of abdomen almost always surmounted by an erect scale.....**FORMICIDÆ.**
Clypeus very small or indistinct; ♂ abdomen long subcylindrical, petiole depressed, nodiform; (♀ and ☿ not positively known)...**DORYLIDÆ.**
Insertion of mandibles contiguous (☿ ♀).....**ODONTOMACHIDÆ.**

18.—Wings not folded longitudinally.—**Fossores**.....19.
Wings more or less folded longitudinally in repose.—**Diplopteryga**.....30.

19.—Prothorax considerably produced posteriorly, the hinder angles reaching the tegulæ; ♀ sometimes apterous.....20.
Prothorax usually consisting of little more than a narrow collar, the posterior angles not reaching the tegulæ; ♀ never apterous.....23.

20.—Abdomen with the first ventral segment distinctly separated from the second by a more or less deep constriction or furrow.....21.
Abdomen with the first ventral segment not separated from the second by a furrow or constriction of the joint.....22.

21.—Intermediate tibiæ with two apical spurs, their coxæ contiguous or but little separated; ♀ apterous.....**MUTILLIDÆ.**
Intermediate tibiæ with a single apical spur, very rarely with two, their coxæ, as a rule, widely separated; ♀ winged.....**SCOLIIDÆ.**

22.—Posterior legs short, not reaching to the apex of the abdomen; eyes emarginate within.....**SAPYGIDÆ.**
Posterior legs long, reaching beyond the apex of the abdomen; eyes not emarginate within.....**POMPILIDÆ.**

23.—Anterior wings with three complete submarginal cells.....24.
Anterior wings with two complete submarginal cells.....29.
Anterior wings with only one complete and distinct submarginal cell. **CRABRONIDÆ.**

24.—Abdomen petiolate .....25.
Abdomen sessile or subsessile, very rarely subpetiolate.....27.
25.—First submarginal cell not receiving a recurrent nervure.....26.
First submarginal cell receiving a recurrent nervure.....MELLINIDÆ.
26.—Petiole of abdomen cylindrical, smooth; flagellum slender at apex; intermediate tibiæ with two apical spurs.....SPHECIDÆ.
Petiole of abdomen depressed and generally furrowed above; flagellum thickened at apex; middle tibiæ with one apical spur.....MIMESIDÆ.
27.—Second submarginal cell receiving both recurrent nervures, the first recurrent rarely uniting with the first transverse cubital nervure.....28.
Second and third submarginal cells each receiving a recurrent nervure.
PHILANTHIDÆ.
28.—Marginal cell appendiculate; mandibles more or less deeply emarginate on exterior margin, scarcely so in *Astata* and *Liris*, in which the marginal cell is obliquely truncate at tip and the labrum not exserted.....LARRIDÆ.
Marginal cell not appendiculate; mandibles with exterior margin entire.
Labrum short, not or scarcely exserted.....NYSSONIDÆ.
Labrum distinctly exserted, sometimes rostriform.....BEMBECIDÆ.
29.—Prothorax long and narrow, produced anteriorly into a neck; metathorax elongate, truncate posteriorly; clypeus carinate, rostriform.
AMPULICIDÆ.*
Prothorax short, transverse; metathorax short, rounded posteriorly; clypeus not carinate or rostriform.....PEMPHREDONIDÆ.
30.—Antennæ clavate or knobbed at apex, the joints of the club generally soldered together; scutellum large, narrowed and rounded posteriorly, superposed upon the postscutellum; anterior wings indistinctly folded in repose.....MASARIDÆ.
Antennæ filiform or subfiliform; scutellum transverse, truncate posteriorly, not overhanging the postscutellum; anterior wings distinctly folded in repose.....31.
31.—Intermediate tibiæ with one apical spur.....EUMENIDÆ.
Intermediate tibiæ with two apical spurs.....VESPIDÆ.
32.—Labium flattened, shorter than the mentum; basal joints of labial palpi not unlike the following joints.....ANDRENIDÆ.
Labium slender, not flattened, longer than the mentum; basal joints of labial palpi elongate.....APIDÆ.

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* The typical number of submarginal cells in this family is three; but the only representative we have in our fauna has but two. Smith, however, states that the neuration is very inconstant, and that the first transverse cubital nervure is frequently obsolete, or partly so, in specimens of the same species.

PHYLLOPHAGA.

This extensive series is composed of a single family, comprising those insects popularly known as Saw-flies, which have the abdomen attached by its entire width to the extended portion of the metathorax, which resembles a segment and has often been described as the first. The anterior tibiæ have two apical spurs, and the ovipositor consists of two compressed saw-like plates applied against each other, and enclosed in a pair of outer sheaths. In the larva state these insects are the most injurious of all hymenoptera, feeding upon the leaves of trees and various plants, and often completely destroying the foliage. The characteristics of the series are given at length by Mr. Norton in his admirable work mentioned below, and which is easily obtainable by all who may wish to make a study of these insects.

Family TENTHREDINIDÆ.

The synopsis given below of this and the following family, is taken in great part from Mr. Norton's exhaustive monograph entitled, "Catalogue of the described Tenthredinidæ and Uroceridæ of North America." (Trans. Am. Ent. Soc. vol. i, June, 1867.) In that valuable paper all the genera and species known at that time to occur in our fauna, as well as the family characters, etc., are described at length. Later, in 1880, the writer published, also in these Transactions, descriptions of many species then considered to be new, adding also a copy of the original descriptions (scattered through various publications), of the species described in the interim; this was followed by a list of the genera and species with references and habitat.*

Table of Subfamilies.

Antennæ 5–8 jointed, short, clavate (except in *Acordulecera*).....**Cimbicinæ.**
Antennæ 3-jointed, third joint long and often furcate in ♂.....**Hylotominæ.**
Antennæ 9-jointed, very rarely 8-jointed (as in *Labidia*); anterior wings with one or two marginal cells.....**Tenthredininæ.**
Antennæ 9-13-jointed, irregular, third joint very long; anterior wings with three marginal and four submarginal cells; ovipositor long.....**Xyelinæ.**
Antennæ multiarticulate, with more than 13 joints.....**Lydinæ.**

* Separata of these publications, under one cover, can be obtained from the American Entomological Society, as well as many of the papers referred to in the following pages.

Surface of the third segment just above the snout-like projection produced into a cone shaped piece forming the direct apex of a fold which extends on each side just above the apical and lateral margins. **Diplorrhos** Aaron.

Emargination or notch of the apex closed, or partly filled up by a membrane, which is excised beneath ..... **Notozus** Först.

Apical margin of the third abdominal segment entire or broadly sinuate. **Holopyga** Dahlb.

Tarsal claw with one small perpendicular tooth in the middle. **Hedychridium** Perrin.

Tarsal claws bifid at the apex, without inner teeth..... **Hedychrum** Latr.

Subfamily CHRYSIDINÆ.

Head as broad, or broader than the postscutellum; space between the eyes on the face as wide as the distance between the base of antennæ and the vertex; the carina transverse, not forming a basin on the vertex; postscutellum rounded posteriorly; first abdominal segment rounded, not carinated on the sides; second segment about twice as long on the dorsum as on the sides, its posterior margin about straight in the middle, convex laterally... **Chrysis** Linn.

Head small, much narrower than the postscutellum; space between the eyes, on the face, narrow, not half as wide as the distance between the base of antennæ and the vertex; the carina extended upward, surrounding the anterior ocellus, forming the margins of a distinct basin, much in shape of a horse-shoe; postscutellum partly hidden, projecting into a subconical piece, which is strongly excavated; first abdominal segment flattened on the sides, causing a short, oblique carina above; second segment more than three times as long on the dorsum as on the sides, its posterior margin equally and very convex..... **Stilbum** Spin.

Subfamily PARNOPINÆ.

Comprising a single genus whose characters are those of the subfamily, and at once recognized by the lengthened bee-like proboscis..... **Parnopes** Fabr.

HETEROGYNA.

This series is composed of a large number of insects familiarly known as Ants (but not including the "white ants," or Termites, which belong to the Neuroptera), "and which are known by their habit of residing in more or less numerous societies under ground; whence arises the necessity for a great number of individuals (workers or neuters) having the sexual organs and instincts rendered abortive, whereby, being freed from the latter, they are the better fitted to perform the labors of the community, for which purpose they are moreover destitute of wings; whilst the males and females are much

less numerous, possessing wings and are produced only for the propagation of their species. * * * These insects have attracted the attention of the observers of Nature from the earliest time; and their untiring exertions for the welfare of the community, their devotion to the young and their carefulness in the collection and storing up of various materials, have led to their being regarded as examples of surprising instinctive foresight." (Westwood).

While considerable has been published concerning the habits of certain of our species, the scientific study of these most interesting creatures has been sadly neglected, owing doubtless to the want of a knowledge of generic characters, which have nowhere, until now, been tabulated in the English language; these tables, however, in consequence of the neglect of the study and the ignorance existing concerning our species, must necessarily be very incomplete. The collection of the American Entomological Society, so rich in most of the other series, is exceedingly meagre in this, and it is notorious that in the many collections sent in, from time to time, for determination, very few ants are represented and then only the most common, which may be partly accounted for by the fact that as a majority of the species are subterranean in their habits and of small size, they are apt to escape the notice of collectors.

The series is characterized by the petiole of the abdomen having one or more scales, or nodes, and the societies consisting of three sexes, males, females and workers. It is divisable into five families, in the following manner:

Table of Families.

Petiole with a single joint.
  Abdomen proper (not including petiole) not constricted between segments 1 and 2.
    Insertion of the mandibles distant.
      Clypeus always distinct and often very large; frontal crest more or less long, not surrounding the insertion of the antennæ; petiole almost always surmounted by an erect scale.....FORMICIDÆ.
      Clypeus very small or even indistinct; frontal crest very short, surrounding the insertion of the antennæ in front; petiole depressed, nodiform; ♂ large, with the abdomen long and cylindrical; ♀ and ☿ not positively known, the former probably larviform.DORYLIDÆ.
    Insertion of the mandibles contiguous or nearly so (☿ ♀).
      ODONTOMACHIDÆ.
  Abdomen proper constricted between segments 1 and 2. .....PONERIDÆ.
Petiole composed of two joints..... .....MYRMICIDÆ.

Nearly 200 species have thus far been described as inhabiting our fauna, about 30 of which are said to be identical with European forms. Since the publication of Mr. Buckley's descriptive papers in 1866, only a few isolated species have been described as indigenous to our country.

For exceedingly interesting accounts of the habits of some of our species, we are indebted to the observations of our esteemed friend and co-laborer, the Rev. Dr. H. C. McCook, a list of whose published writings will be given further on.

The characters given in the following tables are compiled chiefly from the second volume of André's admirable "Species des Hyménoptères d' Europe," published in 1882–83.

Family FORMICIDÆ.

Table of Genera.

Workers and Females.

Frontal carinæ arising more or less near the posterior edge of the clypeus, which does not extend back between insertion of antennæ; abdomen seen from above shows five segments of which the last is conical and terminal, orifice of anus small, circular, ciliated; wings ♀ with one complete submarginal cell.....2.

Frontal carinæ arising at the angles or lateral edges of the clypeus, which is triangular, usually rounded, extending more or less backward between insertion of antennæ; abdomen, viewed from above, shows only the first four segments, the fifth being concealed under the preceding; anus large, transverse, not ciliated.....9.

2.—Antennæ 12-jointed, inserted as near, or even nearer, to middle of frontal carinæ than to their anterior extremity, and distant from posterior edge of clypeus; clypeal foveæ separated from antennal foveæ; ☿ without ocelli.....3.

Antennæ inserted near the anterior extremity of the frontal carinæ and very near the posterior edge of clypeus.....4.

3.—Clypeus trapezoidal, the sides diverging more or less anteriorly; frontal carinæ sinuous in form of an S; head not obtuse or truncate in front; scale of petiole oval, vertical, usually feebly and equally convex on its two faces.....**Camponotus** Mayr.

Clypeus with parallel sides, only slightly diverging at anterior angles; anterior part of head forming an obtuse angle with the remainder of its surface, or even sharply truncate; scale square, thick, convex in front, flat behind and more or less emarginate above.....**Colobopsis** Mayr.

4.—Mandibles broad flat, triangular, apical margin dentate.....5.

Mandibles almost cylindrical, curved, very narrow, acute at tip, without apical margin or trace of teeth; frontal area well defined; ocelli present; metathorax gibbous; scale thick, oval, vertical; wings ♀ with one discoidal cell.....**Polyergus** Latr.

5.—Antennæ 9-jointed, scape long, first joint of funicle longer than the two following united, apical joint large, fusiform; head emarginate posteriorly; clypeal and antennal foveæ confluent; clypeus very convex, hood-like, partly hiding the mandibles; frontal carinæ short; frontal area triangular; thorax small, short; metathorax broader than long; petiole of abdomen slender at tip and strongly inclined forward; wings ♀ without discoidal cell.....**Brachymyrmex** Mayr.

Antennæ 12-jointed.....6.

6.—Basal joints of the funicle, except the first, shorter than the others; ocelli indistinct or wanting in ☿; frontal area superficially impressed, almost twice broader than high.....7.

Basal joints of funicle as long or longer than the others (the last excepted); ocelli very distinct; frontal area sharply defined.....8.

7.—Clypeal foveæ not confluent with antennal foveæ; scale quadrangular or cuneiform, oblique, directed upwards and forwards; abdomen tapering to a point, enlarged and strongly convex above at base, touching upper posterior part of scale; ocelli wanting in ☿.....**Prenolepis** Mayr.

Clypeal foveæ confluent with antennal foveæ; scale vertical or nearly so, quadrangular and straight; abdomen not prolonged anteriorly; ocelli very small, indistinct or wanting in ☿.....**Lasius** Fabr.

8.—Frontal carinæ diverging posteriorly, the external margin slightly convex; fourth joint of maxillary palpi slightly longer than the fifth; scale large, vertical; wings ♀ extending beyond apex of abdomen, with one large discoidal cell, rarely wanting.....**Formica** Linn.

Frontal carina nearly parallel, the external margin concave; fourth joint of maxillary palpi almost twice as long as fifth; petiole with a node or thick scale; wings ♀ with the discoidal cell very small or wanting.

Myrmecocystus Wesm.

9.—Metathorax cubical, the horizontal face nearly flat or slightly convex, the vertical face concave, their point of union forming a crest terminated on each side by a tooth; clypeus impressed on middle of anterior margin; scale thick, cuneiform, strongly inclined forwards; wings ♀ with two complete submarginal cells.....**Dolichoderus** Lund.

Metathorax not cubical, convex, unarmed, the declivous face flat.....10.

10.—Clypeus with anterior margin entire; ocelli distinct in both sexes; abdomen not prolonged in front, the petiole with an oval, erect scale, rounded above, where it is often emarginate in ♀; wings ♀ with two submarginal cells.....**Liometopum** Mayr.

Clypeus rather deeply notched on middle of anterior margin; ocelli absent in ☿, distinct in ♀; abdomen enlarged anteriorly, covering the petiole by a prolongation of its basal part, petiole quadrangular, flat, without apparent scale, terminated in front by a transverse thickened edge; wings ♀ with but one complete submarginal cell.....**Tapinoma** Först.

Males.

Clypeus not prolonged backwards between insertion of antennæ; tibial spurs simple; wings with only one submarginal cell, with or without discoidal cell.....2.

Clypeus extending more or less between insertion of antennæ; tibial spurs pectinate.....8.

2.—Antennæ inserted as near, or even nearer, to middle of frontal carinæ than to their anterior extremity, and distant from posterior edge of clypeus; clypeal foveæ separated from antennal foveæ; frontal area indistinctly defined, much broader than long; scale thick; wings without discoidal cell.....3.

Antennæ inserted toward anterior extremity of frontal carinæ, at or very near posterior edge of clypeus; wings with or without discoidal cell...4.

3.—Clypeus trapezoidal, its lateral margin diverging in front where they reach the lateral angles of the head; antennæ long, with first joint of funicle scarcely larger than the second; frontal carinæ sinuate, scarcely divergent.....**Camponotus** Mayr.

Clypeus almost square, only slightly broader at the anterior angles, which do not reach lateral margin of the head; antennæ short, first joint of funicle thickened at apex, twice as long and as thick as the following joints; frontal carinæ sinuous, strongly diverging behind.

Colobopsis Mayr.

4.—Antennæ 10-jointed; mandibles not dentate, acute at tip; mesothorax gibbous, prolonged anteriorly; scale of petiole small; external genital valves triangular, broad, short, rounded at tip; wings without complete submarginal cells.....**Brachymyrmex** Mayr.

Antennæ 13-jointed .....5.

5.—Clypeal foveæ not united to antennal foveæ; antennæ inserted very near the clypeus, but not touching its posterior margin; scale thick; mandibles not toothed; external genital valves very narrow.

Prenolepis Mayr.

Clypeal foveæ united to antennal foveæ; antennæ inserted on posterior margin of clypeus.....6.

6.—Mandibles broad, flat, with apical margin dentate or simple; anterior margin of clypeus convex, prolonged .....7.

Mandibles cylindrical, short, narrow, acute at tip, without apical margin and without teeth; clypeus triangular, rounded at base, convex, its anterior margin straight and not prolonged; scale vertical, thick, quadrangular, emarginate above; wings with one discoidal cell.

Polyergus Latr.

7.—Frontal area indistinct; external genital organs very small; first joint of funicle thicker than second; size small, much inferior to that of ♀.

Lasius Fabr.

Frontal area sharply defined; external genital organs large; first joint of funicle usually not thicker than second; size large, very little less than that of ♀.

Abdomen rather depressed above; wings extending beyond apex of abdomen; discoidal cell large, rarely wanting; first joint of funicle one-third shorter than second; thorax slightly enlarged laterally at middle; prothorax somewhat transversely convex.....**Formica** Linn.

Abdomen cylindrical, not depressed; wings short, not exceeding the abdomen; discoidal cell small or wanting; first joint of funicle as long as second; thorax compressed laterally and of a moderately uniform size; prothorax slightly concave, transverse medially.

Myrmecocystus Wesm.

8.—Wings with two submarginal cells; clypeusd istinctly prolonged backward between frontal carinæ; scape short, not longer than the first two or three joints of funicle .....9.

Wings with only one submarginal cell; clypeus scarcely prolonged between frontal carinæ; scape almost as long as the first five joints of funicle; petiole of abdomen thick, obliquely compressed, rounded above, without scale .....**Tapinoma** Först.

9.—Petiole of abdomen with an erect scale; external genital organs very large, occupying posterior third of abdomen, external genital valves broad at base, narrowed at tip which is rounded.....**Liometopum** Mayr.

Petiole of abdomen nodiform, without scale; external genital organs small, external genital valves almost semicircular.....**Dolichoderus** Lund.

Family ODONTOMACHIDÆ.

Mandibles inserted very close to each other, opposite the insertion of antennæ, and on the middle of anterior margin of the head which is hexagonal and strongly narrowed in front; mandibles long, protuberant and suddenly recurved within at tip which is tridentate; eyes rather large; antennæ 12-jointed; petiole of abdomen surmounted by a free, oval, rather thick scale. **Odontomachus** Latr.

Family DORYLIDÆ.

♂.—Body elongate, cylindrical, subcompressed; head small, transverse, and when the insect is viewed from above, almost or quite concealed by the large gibbous mesothorax; eyes and ocelli large and very prominent; antennæ usually setaceous; mandibles edentate, forcipate, acute; maxillary and labial palpi 2-jointed; thorax ovate, gibbous; metathorax abruptly truncate behind; anterior wings extending beyond apex of abdomen, with one marginal and three submarginal cells, and one recurrent nervure, the third discoidal cell being open at apex; tibiæ with a single apical spur; abdomen cylindrical, often slightly compressed, the basal segment or node smaller than the following segment, quadrate or subquadrate and separated from the remainder of the abdomen by a deep constriction; apex of venter with a more or less deeply emarginate plate, the apical angles of which are usually acute and dentiform and slightly recurved; ☿ and ♀ unknown.....**Labidus** Jur.

Of this peculiar genus, we have five described species, all from Utah and Texas, and of which only the males are known; they seem to be common where they occur.

This is supposed to be the ♂ of *Eciton*, which, however, is placed in the Myrmicidæ, the abdominal petiole being composed of two nodes.

Family PONERIDÆ.

Table of Genera.

Mandibles long, narrow, acute at tip, without apical margin, and denticulate along inner margin; clypeus toothed on anterior margin; petiole almost cylindrical, attached to the abdomen by the whole of its posterior face (☿ ♀).....**Amblyopone** Erichs.

Mandibles flat, triangular, the broad terminal margin simple or toothed; petiole free, cubical and surmounted by a thick scale.

Antennæ 12-13-jointed.

Last joint of funicle not as long as the four preceding joints combined; eyes ☿ ♀ placed near the anterior lateral margin of head; metathorax unarmed; wings ♂ ♀ with the two complete submarginal cells and the discoidal cells joining each other, marginal cell complete; antennæ ☿ ♀ 12-jointed, ♂ 13-jointed.....**Ponera*** Latr.

Last joint of funicle fully as long as the four preceding joints combined; eyes placed on the lateral middle of head; metathorax with a short broad triangular tooth on each side; antennæ 12-jointed; tibial spurs pectinate (☿).....**Proceratium** Roger.

Antennæ 9-jointed, last joint very large, oval, nearly as long as all the preceding funicle joints united; apical margin of clypeus projecting over the mandibles, which are without teeth (☿ ♀)...**Discothyrea** Roger.

Family MYRMICIDÆ.

Table of Genera.

Workers.

Antennal fovea terminated outwardly by a carina; clypeus interposed between insertion of antennæ; frontal carinæ placed in middle of anterior part of the head.....2.

Antennal fovea without external carina.....3.

2.—Antennæ 11-jointed; eyes tolerably large, reticulated; maxillary palpi 4-jointed, labial palpi 2-jointed; head more or less cordate, with a tooth on each side posteriorly; thorax above armed with several spines or tubercles.....**Atta** Fabr.

Antennæ 12-jointed; eyes very minute and simple or wanting; frontal area not impressed; maxillary palpi 2-jointed, labial palpi 3-jointed (two kinds of workers, the major having the mandibles very long, narrow, and curved at tip, somewhat sickle-shaped, but not flattened, the head very large).....**Eciton** Latr.

3.—Clypeus interposed between insertion of antennæ; frontal carinæ placed in middle of anterior part of head; antennæ 10-12-jointed.....4.

Clypeus not interposed between insertion of antennæ.

Frontal carinæ placed close together on middle of anterior part of head; eyes large, elongate-oval, occupying more than half of lateral margin of head; frontal area wanting; antennæ 12-jointed; mandibles trigonate; first joint of petiole slender at base and rather suddenly nodose at tip. **Pseudomyrma** Guér.

Frontal carinæ placed on lateral margin of the head, which is cordiform; antennæ 6-jointed, second and third joints of funicle short; metathorax unarmed.....**Strumigenys** Smith.

4.—Antennæ 10-jointed, the club very large, 2-jointed; clypeus with two lateral carinæ which are terminated in front by two teeth; eyes very small;

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* *Arotropus* Prov., which is placed by the describer in the Braconidæ, appears to be identical with this genus.

maxillary and labial palpi 2-jointed; metathorax unarmed; head very large, subquadrate, emarginate posteriorly and divided above by a longitudinal impressed line.....**Solenopsis** Westw.

Antennæ 11-12-jointed.....5.

5.—Petiole attached to upper basal surface of abdomen, which is cordate, depressed above, convex beneath, acuminate posteriorly; antennæ 11-jointed; metathorax usually armed with two spines or teeth, rarely unarmed.....**Cremastogaster** Lund.

Petiole attached to basal middle of the abdomen.....6.

6.—First joint of petiole nearly cubical, not or scarcely narrowed anteriorly; apical margin of mandibles confusedly dentate, angular, so that when they are closed there is a triangular space between them and the clypeus; the latter short, with two longitudinal crests which are terminated in front by two obtuse teeth; antennæ 12-jointed, the club 3-jointed; thorax not strangulated above; metathorax with two strong spines behind and two very small teeth in front towards anterior margin; maxillary palpi 4-jointed, labial palpi 3-jointed.....**Myrmecina** Curt.

First joint of petiole narrow and cylindrical at base, nodose and elevated at apex.....7.

7.—Last three joints of funicle taken together distinctly shorter than the preceding joints combined.....8.

Last three joints of funicle taken together as long or longer than the preceding joints combined.....9.

8.—Frontal area deep, obtusely rounded behind; maxillary palpi 4-5-jointed, labial palpi 3-jointed.

Thorax strangulated between meso- and metathorax, the pro- and mesothorax together more or less hemispherical...**Aphænogaster** Mayr.

Thorax not constricted between meso- and metathorax, the sutures indistinct, prothorax much broader than the rest of the thorax.

Pogonomyrmex Mayr.

Frontal area acute behind; maxillary palpi 6-jointed, labial palpi 4-jointed; metathorax rather flattened above; femora claviform, tibial spurs pectinate.....**Myrmica** Latr.

9.—Metathorax entirely unarmed; thorax strongly constricted above between meso- and metathorax, pro- and mesothorax without trace of suture between them; clypeus longitudinally furrowed medially, its anterior margin protuberant and produced beyond the mandibles, which are rather narrow; antennæ 11-12-jointed, the club 3-jointed, of which the last joint is as long or longer than the two preceding joints united.

Monomorium Mayr.

Metathorax armed with two teeth or spines.....10.

10.—Funicle of antennæ, which are 12-jointed, without distinct club, gradually thickening from base to apex, first joint as long as broad, the others beginning very short are gradually lengthened; eyes very small; mandibles broad, dentate; frontal area narrow and deep; thorax slightly constricted between meso- and metathorax, the teeth of the latter triangular, acute; first joint of petiole narrow and cylindrical at base, nodiform at apex; maxillary palpi 4-jointed, labial palpi 3-jointed.

Stenamma Westw.

Funicle with a distinct club of 3 joints; eyes moderately large.....11.

11.—Thorax strongly constricted between meso- and metathorax; mandibles very broad; frontal area small, clearly defined; antennæ 12-jointed (the major worker has the head enormously developed, short, more than twice as broad as the thorax, the frontal groove very deep, traversing the vertex and dividing the back of the head into two convex lobes). **Pheidole** Westw.

Thorax slightly or not at all strangulated between the meso- and metathorax.

Lateral basal margin of clypeus distorted or elevated between frontal carinæ and insertion of mandibles, forming a projecting ridge; thorax short, erect, slightly impressed between meso- and metathorax, prothorax with the shoulders angular, metathorax with two spines; tibial spurs simple; antennæ 12-jointed; maxillary palpi 6-jointed, labial palpi 3-jointed..... **Tetramorium** Mayr.

Lateral basal margin of clypeus not elevated; thorax elongate, more than twice as long as high, little or not impressed between meso- and metathorax, prothorax with shoulders rounded, metathorax with two spines; no tibial spurs; antennæ 11-12-jointed; frontal area not clearly defined; maxillary palpi 5-jointed, labial palpi 3-jointed. **Leptothorax** Mayr.

Females.

Antennal foveæ terminated outwardly by a carina; clypeus interposed between insertion of antennæ; frontal carinæ placed in middle of anterior part of the head; antennæ 11-jointed; head triangular, with a small tooth on each side behind; thorax viewed from above large, ovate; metathorax with two small teeth; abdomen subglobose, second joint of petiole short and broad; wings with one submarginal cell, which like the marginal is long and narrow, no discoidal cell..... **Atta** Fabr.

Antennal foveæ without external carina..... 2.

2.—Clypeus not interposed between insertion of antennæ..... .....3.

Clypeus interposed between insertion of antennæ; frontal carinæ placed in middle of anterior part of the head ....4.

3.—Frontal carinæ placed in middle of anterior part of the head; eyes large, elongate-ovate, occupying a large portion of lateral margin of the head; antennæ inserted close together near anterior margin; first joint of petiole pedunculate, nodose at tip, second joint globose; antennæ 12 (or 13?) jointed..... **Pseudomyrma** Guér.

Frontal carinæ placed on lateral margin of the head, defining large, elongate antennal foveæ, the concavity of which is not visible from above; antennæ 6-jointed..... **Strumigenys** Smith.

4.—Petiole attached to upper basal surface of abdomen, which is cordiform, depressed above, convex beneath, acuminate at tip; metathorax rarely unarmed; antennæ 11-jointed; wings with one complete submarginal and one discoidal cell..... **Cremastogaster** Lund.

Petiole attached to the basal middle of abdomen, which is oval.....5.

5.—First joint of petiole nearly cubical; clypeus short, with two longitudinal crests which are terminated in front by two obtuse teeth; antennæ 12-jointed; metathorax with two spines posteriorly; wings dark colored, hairy, margins ciliated, one complete submarginal cell, no discoidal, marginal cell short, closed, appendiculate..... **Myrmecina** Curtis.

First joint of petiole not cubical, narrowed and cylindrical at base, nodiform at apex.....6.

6.—Antennæ 11-jointed, club very large, 2-jointed; clypeus with two longitudinal carinæ; metathorax unarmed; one complete submarginal and one discoidal cells, marginal cell open at apex.....**Solenopsis** Westw.

Antennæ 11-12-jointed, with the club more than 2-jointed, or without distinct club.....7.

7.—First submarginal cell divided by an abbreviated longitudinal nervure: frontal area acute at base; tibial spurs pectinate; wings with one complete submarginal cell.....**Myrmica** *Latr.*

First submarginal cell not divided.....8.

8.—Mandibles broad, their apical margin acute, without teeth, or with only two teeth anteriorly; frontal groove extending as far as the occiput; antennæ 12-jointed, with the 3-jointed club longer than half of funicle; thorax broad, depressed above; metathorax bidentate; second joint of petiole transverse, subtuberculate laterally; maxillary and labial palpi 2-jointed.....**Pheidole** Westw.

Mandibles broad, triangular, their anterior margin pluridentate.....9.

9.—Last three joints of funicle together distinctly shorter than the preceding joints combined.....10.

Last three joints of funicle together as long or longer than the preceding joints combined.....11.

10.—Frontal area distinctly impressed, obtusely rounded above; antennæ 12-jointed, without distinct club; maxillary palpi 4-jointed, labial palpi 3-jointed.

Marginal cell incomplete, two complete submarginal cells.

Aphænogaster Mayr.

Marginal cell complete, one (or two?) complete submarginal cells.

Pogonomyrmex Mayr.

Frontal area indistinct or wanting; antennæ 11-12-jointed, with a distinct 3-jointed club; maxillary palpi 5-jointed, labial palpi 3-jointed; one complete submarginal and one discoidal cells, marginal cell very short, rounded apically.....**Leptothorax** Mayr.

11.—Lateral basal margin of clypeus distorted or elevated between frontal carinæ and insertion of mandibles, forming a projecting ridge; second node of petiole strongly transverse, almost twice as broad as long; metathorax bidentate; antennæ 12-jointed, club distinct, apical joint as long as the two preceding united; maxillary palpi 6-jointed, labial palpi 3-jointed.

Tetramorium Mayr.

Lateral basal margin of clypeus not distorted or elevated; second joint of petiole not twice as long as broad.

Metathorax entirely unarmed; antennæ 11-12-jointed, with a distinct 3-jointed club; clypeus viewed laterally protuberant, overhanging the base of mandibles; thorax narrow, elongate, rather higher than broad; one complete submarginal cell, no discoidal; maxillary and labial palpi 2-jointed.....**Monomorium** Mayr.

Metathorax armed with two short, triangular, acute teeth; antennæ 12-jointed, funicle gradually thickened from base to apex, not forming a distinct club; frontal area narrow, elongate, forming an obtuse angle with clypeus, which has two longitudinal median carinæ; one long com-

plete submarginal and one small discoidal cells; maxillary palpi 4-jointed, labial palpi 3-jointed..... .....**Stenamma** Westw.

Males.

Anterior wings without a stigma, with one long narrow submarginal cell, the marginal cell also unusually narrow, no complete discoidal cell; antennæ 13-jointed; head small, eyes and ocelli prominent; thorax with short dense pubescence, mesothorax with well impressed longitudinal lines.....**Atta** Fabr.

Anterior wings with a distinct stigma..... ....2.

2.—Antennæ 10-jointed, second joint of funicle as long or longer than the two following joints united; mesothorax above with two convergent grooves, which are confluent towards the middle and then continued in a straight line to scutellum; one complete submarginal and one discoidal cells; mandibles flat, triangular, toothed on apical margin.
Tetramorium Mayr.

Antennæ with more than 10 joints..... ....3.

3.—Petiole attached to upper basal surface of abdomen, which is cordiform, more convex beneath than above and acuminate behind; antennæ 11–12-jointed, scape very short, only a little longer than first joint of funicle, which is spherical; mesothorax without distinctly impressed converging lines; metathorax unarmed.....**Cremastogaster** Lund.

Petiole attached to the basal middle of the abdomen..... 4.

4.—First submarginal cell partially divided medially by a longitudinal nervure, discoidal cell present; antennæ 13-jointed; mesothorax with two convergent grooves; tibial spurs pectinate..... .....**Myrmica** Latr.

First submarginal cell not divided..... ....5.

5.—Anterior wings with one complete discoidal cell.....6.

Anterior wings without discoidal cell, one complete submarginal cell.....7.

6.—Two complete submarginal cells (except perhaps in *Pogonomyrmex*).

Second submarginal and discoidal cells contiguous; antennæ 13-jointed, first joint of funicle short, about one-third the length of second, which is much longer than third.

Eyes large, oblong, head elongate, considerably extended behind the eyes; discoidal cell much larger than the second submarginal; abdomen elongate; body slender, glabrous.....**Pseudomyrma** Guér.

Eyes round, prominent, head subtransverse, not much extended behind the eyes; discoidal cell not larger than second submarginal cell; abdomen subglobose, shining; body pilose..**Pogonomyrmex** Mayr.

Second submarginal and discoidal cells remote, marginal cell open at apex; antennæ 13-jointed.

First joint of funicle spherical, the others cylindrical; apex of second submarginal cell not appendiculate.....**Pheidole** Westw.

First joint of funicle cylindrical like the others; apex of second submarginal cell appendiculate..... .....**Aphænogaster** Mayr.

One complete submarginal cell.

Marginal cell elongate.

Antennæ 12-jointed, first joint of funicle globose, scape short, ovate; marginal cell open at apex; mesothorax without converging impressed lines..... ....**Solenopsis** Westw.

Antennæ 13-jointed, first joint of funicle not globose, scape elongate clavate; marginal cell closed at apex; mesothorax with converging impressed lines. ..... **Stenamma** Westw.

Marginal cell remarkably short, broadly rounded apically, stigma large, thick, short; antennæ 12–13-jointed, scape elongate, about as long as the first three joints of funicle united; mesothorax with converging impressed lines. ..... **Leptothorax** Mayr.

7.—Wings dark colored, pilose, ciliated, marginal cell short, obtuse at tip, appendiculate; antennæ 13-jointed, first joint of funicle cylindrical; mandibles rather narrow, tridentate, concealed beneath the labrum; mesothorax with two convergent grooves; metathorax bidentate. **Myrmecina** Curtis.

Wings hyaline, not pilose or ciliated, marginal cell long, pointed at tip; antennæ 12-13-jointed, usually attenuate; mesothorax without convergent grooves; metathorax usually unarmed. ..... **Monomorium** Mayr.

NOTE.—Since the above was in type, the compiler has seen a copy of Dr. Mayr's recent paper, entitled "Die Formiciden der Vereinigten Staaten von Nordamerika (Verh. zool.-bot. Ges. Wien, Dec. 1886), in which the following genera, not characterized in the foregoing tables, are mentioned as occurring in our fauna.

Dr. Mayr appears also to have confirmed his former opinion that *Labidus* is the ♂ of *Eciton*.

Iridomyrmex Mayr. -- ☿. Head, together with the mandibles, triangular, being narrowed toward the cheeks; mandibles very broad, the apical (or biting) margin only slightly shorter than the exterior margin, more or less distinctly toothed; maxillary palpi 6 jointed, short; middle lobe of labrum broadly triangular, deeply emarginate medially, lateral lobes pointed; clypeus triangular, the posterior angles strongly rounded, not carinate, only moderately convex; clypeal foveæ uniting with the antennal foveæ; frontal carina arising at the lateral margin of the clypeus near to the posterior end, and extending straight and parallel backward, ending in the elevation between the eyes; antennæ 12-jointed, inserted on the anterior margin of the frontal carinæ at the edge of the clypeus, the scape tolerably long, extending beyond the posterior margin of the head, flagellum nearly setaceous, only feebly thicker at apex than at base, the first joint longest, the next following until the penultimate gradually longer, the spindle-shaped apical joint also longer; frontal area triangular, somewhat longer than broad and very indistinct; frontal groove always indistinct; ocelli absent; eyes tolerably small, oval, placed almost in the middle of the upper side of the head, between the cheeks and the hind angles; occiput emarginate posteriorly; prothorax above hemispherically convex, sloping gradually to the mesothorax at the end of which it is most deeply impressed; metathorax abruptly elevated, strongly gibbous, slightly longer than broad; abdomen moderately small, the petiole with an erect, tolerably short and thick scale; posterior femora somewhat longer than their tibiæ, spurs pectinate, claws simple.

This genus seems closely allied to the next, differing chiefly in the form of the antennæ and in the absence of the ocelli.

Dorymyrmex Mayr.—☿. Mandibles triangular, external margin broadly curved, apical (or biting) margin dentate, with a large tooth in front; maxillary palpi 6-jointed, joints 1–2 very short, 3 very long, curved, thickened toward apex; labial palpi 4-jointed; clypeus triangular, slightly projecting between insertion of antennæ, not carinate, posterior angles rounded; clypeal and antennal foveæ confluent; frontal carinæ short, linear, parallel, slightly diverging behind; antennæ 12-jointed, inserted at the margin of the clypeus, scape long, slender, funicle filiform, the joints from base to apex of the latter gradually shorter, basal joint very long, the penultimate very short; frontal area subtriangular; eyes ovate, placed in the superior part of the head nearly equidistant from the anterior and posterior margins; ocelli distinct; occiput deeply arcuately excavate, the lateral margins slightly curved, the head beneath with a circle of long hairs; thorax constricted between meso- and metathorax, the latter arched above, armed with a tooth or obtuse horn; abdomen, seen from above, with four segments, anus inferior, the petiole either with a node or scale; legs slender, spurs of posterior tibiæ with long pectinations.

♀.—Head oval, convex above, excavated beneath, very broad behind the middle; clypeus transversely triangular, projecting between insertion of antennæ, convex medially; frontal area acutely triangular; frontal groove short and distinct; antennæ 12-jointed; thorax compressed; metathorax unarmed; abdomen elongate oval, the scale of the one-jointed petiole erect, ovate, obtusely toothed above; wings with two submarginal cells; tibial spurs pectinate.

♂.—Mandibles moderately long, apical (or biting) margin multidentate, the apex very acute; clypeus transversely triangular, projecting slightly between the insertion of antennæ; moderately convex; antennæ 13-jointed, the two basal joints of funicle longer than the remainder; mesothorax produced above the prothorax; metathorax unarmed; abdomen oval, the petiole above subnodose; legs very slender, tibial spurs pectinate; external genital valves compressed, sublinear, rounded at tip.

This genus, and also the preceding, belong to the Formicidæ, and are placed by Dr. Mayr between *Prenolepis* and *Liometopum*.

Lobopelta Mayr.—☿. Mandibles flat, depressed, slender, triangular or parallel-margined, obliquely truncate at tip so that the truncation is the "biting edge," which is toothed; clypeus elevated medially, kite-shaped and carinate, the carina extending posteriorly between the closely placed frontal ridges; the anterior middle of the clypeus is obtuse or sharply prolonged and fills up the triangular space left by the mandibles; antennæ 12-jointed, the scape long, reaching beyond the occiput, first joint of flagellum as long or longer than the second; eyes moderately large and rounded; thorax feebly convex above, subcompressed laterally, prothorax much narrowed anteriorly, mesothorax very short, only one-third as long as the prothorax and indistinctly separated from the metathorax, the face of which is more or less abruptly declivous; abdomen long, cylindrical, scale of the petiole sometimes compressed laterally, longer than broad, or the length and breadth are subequal, or it is very strongly compressed from before and behind and transverse; tarsal claws pectinate.

This genus belongs to the Poneridæ, and is represented in our fauna by one species (*septentrionalis* Mayr), found near Washington, D. C.

FOSSORES.

This series, which comprises the different families of sand and wood wasps, is distinguished from the preceding by the form of the abdomen, the petiole being simple, i. e. not formed into scales or nodes, and the sexes consisting of males and females only. The wings are never folded and are present in both sexes, except in the females of the Mutillidæ which are always apterous. The legs of the females are formed for burrowing, and not fitted for collecting pollen, the basal joint of the posterior tarsi being subcylindrical, and not dilated, flattened and densely hairy as in most of the Bees.

The families composing this large series may be separated in the following manner:

Table of Families.

Prothorax considerably produced posteriorly, the hinder angles reaching the tegulæ; ♀ sometimes apterous, in which case the segments of the thorax are almost always soldered together ..... 2.

Prothorax usually consisting of little more than a narrow collar, the posterior angles often lobately produced, but never reaching the tegulæ; ♀ never apterous ..... 3.

2.—Abdomen with the first ventral segment distinctly separated from the second by a more or less deep constriction or furrow.

Intermediate tibiæ with two apical spurs,* their coxæ contiguous or nearly so; ♀ apterous ..... MUTILLIDÆ.

Intermediate tibiæ with but one apical spur (except in *Myzine* ♀), their coxæ widely separated (less so in *Tiphia* ♂ and *Myzine* ♂); ♀ always winged ..... SCOLIIDÆ.

Abdomen with the first ventral segment not separated from the second by a furrow or constriction of the joint.

Posterior legs short, not reaching to the apex of the abdomen; eyes emarginate within ..... SAPYGIDÆ.

Posterior legs long, reaching beyond the apex of the abdomen; eyes not emarginate within ..... POMPILIDÆ.

3.—Anterior wings with three complete submarginal cells ..... 4.

Anterior wings with two complete submarginal cells ..... 5.

Anterior wings with but one complete and distinct submarginal cell (in *Trypoxylon* the second submarginal and third discoidal cells are indistinctly defined) ..... CRABRONIDÆ.

* In the ♀ of *Myzine* in the Scoliidæ, the intermediate tibiæ have apparently two apical spurs, but then the marginal cell is long and narrow, and distinctly separated from the anterior margin of the wing, and the third submarginal cell extends far beyond the apex of the marginal, which is never the case in the Mutillidæ. In species with spinose legs it is difficult to distinguish the apical spurs from the spines, the former, however, are generally colored differently from the latter.

inflata Aaron, ibid. 237, ♂ ♀. Col. Utah, Cala.
integra Cress. (*nec.* Fabr.), Proc. Ent. Soc. Phil. iv, 306; Norton, Trans. Am. Ent. Soc. vii, 240 (= *tota*).
intricata Brullé, Hym. 25; Aaron, Trans. Am. Ent. Soc. xii, 241, ♂ ♀. U.S.
inusitata Aaron, Trans. Am. Ent. Soc. xii, 227. Cala. Vanc.
lateridentata Aaron, ibid. 228, ♀. Mont. Wash.Terr.
lauta Cress., Proc. Ent. Soc. Phil. iv, 310, ♀. Col. Tex. Ariz. Cala. Wash.Terr.
martia Patton, Can. Ent. xi, 67; Aaron, Trans. Am. Ent. Soc. xii, 226. Can.
meta Aaron, Trans. Am. Ent. Soc. xii, 234, ♂ ♀. Montana.
montana Aaron, ibid. 234, ♀. Montana.
mucronata Brullé, Hym. 45 (= *parvula*).
nitidula Fabr., Ent. Syst. ii, 243; Aaron, Trans. Am. Ent. Soc. xii, 236. Can. U.S.
Nortoni Aaron, Trans. Am. Ent. Soc. xii, 237, ♂ ♀. Can. U.S.
optima Aaron, ibid. 227, ♀. Cala.
pacifica Say, Lec. Edit. i, 384; Aaron, Trans. xii, 227, ♂ ♀. Labr. U.S.
parvula Fabr., Syst. Piez. 176; Aaron, Trans. xii, 231. U.S.
Pattoni Aaron, Trans. Am. Ent. Soc. xii, 235, ♀. Col.
pellucidula Aaron, ibid. 235, ♀. Va.
pennsylvanica Brullé, Hym. 24; Aaron, Trans. xii, 242, ♂. Pa. Fla.
peracuta Aaron, ibid. 237. Ga. Fla. Ky.
perpulchra Cress., Proc. Ent. Soc. Phil. iv, 308, ♀. Can. Vanc. U.S.
prasinus Cress., ibid. 310 (= var. *lauta*).
propria Aaron, Trans. Am. Ent. Soc. xii, 238, ♂ ♀. Col. Ariz. Mont. Cala.
pulcherrima Cress., Proc. Ent. Soc. Phil. iv, 311 (= var. *lauta*).
scitula Cress., ibid. 308, ♀. Col.
sexdentata Fabr., Ent. Syst. Suppl. 258; Aaron, Trans. xii, 241. Ga.
smaragdicolor Smith, Lord's Nat. Vanc. Is. 343. Brit.Am.
smaragdula Fabr., Ent. Syst. ii, 239; Aaron, Trans. xii, 242. U.S.
striatellus Norton, Trans. Am. Ent. Soc. vii, 241 (= *verticalis*).
texana Gribodo; Aaron, ibid. xii, 239, ♂ ♀. Tex.
tota Aaron, ibid. 228. Mass. Col.
tridens St.Farg; Brullé, Hym. 46 (= *parvula*).
3-*dentata* Dahlb., Dispos. 1845, 15, 22 (= *parvula*).
tripartita Aaron, Trans. Am. Ent. Soc. xii, 238, ♀. Ariz.
venusta Cress., Proc. Ent. Soc. Phil. iv, 311, ♂. Col. Tex. Ariz.
verticalis Patton, Can. Ent. xi, 67. U.S.
virens Cress., Proc. Ent. Soc. Phil. iv, 309 (= *parvula*).

STILBUM Spin.

amethystinum Fabr. (*Chrysis*); Aaron, Trans. xii, 243. Can. (Provancher.)

Subfamily PARNOPINÆ.

PARNOPES Fabr.

chrysoprasina Smith, Tr. Ent. Soc. Lond. 1874, 454; Aaron, Tr. xii, 245. N.C.
Edwardsii Cress. (*Euchroeus*), Proc. Ent. Soc. A. N. S. 1879, iv, x. Cala.

Family FORMICIDÆ.

CAMPONOTUS Mayr.

americanus Mayr, Verh. z.-b. Ges. Wien, 1862, 661 (= *castaneus*).
atriceps Smith (*Formica*); Mayr., ibid. 1886, 423. Ct. Mass. Fla. (S.Am.)
castaneus Latr. (*Formica*); Mayr. ibid. 420. N.Am. (Eur.)
clarus Mayr, ibid. 1862, 660 (= *castaneus*).
esuriens Smith (*Formica*); Forel, Bull. Soc. Vaud. xvi, 76, ☿. U.S. (Mex.)
fumidus Roger, Berl. Ent. Zeits. 1863, 151; Mayr, 1886, 422. Tex. (S. Am.)
herculaneus Linn. (*Formica*); Mayr, Verh. z.-b. Ges. 1886, 419. N.Am. (Eur.)
lævigatus Smith (*Formica*); Mayr, ibid. 420. Cala. N. Mex. Ariz.
lateralis Latr. (*Formica*); Smith, Brit. Mus. Cat. Hym. vi, 52. N.Am. (Eur.)
MacCooki Forel, Bull. Soc. Vaud. Sc. Nat. xvi, 69 (= var. *sylvaticus*).
marginatus Latr. (*Formica*); Mayr, Verh. z.-b. Ges. 1886, 423. N.Am. (Eur.)
mina Forel, Bull. Soc. Vaud. Sc. Nat. xvi, 83, ☿. L.Cala.
pictus Forel, ibid. 59, ☿ ♀ ♂ (= var. *herculaneus*).
pubescens Fabr. (*Formica*), Ent. Syst. ii, 352. N.Am. (Eur.)
socius Roger, Berl. Ent. Zeits. 1863, 140, ☿; Mayr, Verh. z.-b. Ges. 1886, 422. Fla.
sylvaticus Oliv. (*Formica*); Mayr, Verh. z.-b. Ges. 1886, 422. N.Am.
vicinus Mayr, ibid. 1870, 940 (= var. *sylvaticus*).
yankee Forel, Bull. Soc. Vaud. xx, 1885, 340 (= *atriceps*).

COLOBOPSIS Mayr.

impressa Roger, Berl. Ent. Zeits. 1863, 160, ☿; Mayr, Verh. z.-b. Ges. 1886, 423. Ga. Fla.

POLYERGUS Latr.

lucidus Mayr, Verh. z.-b. Ges. Wien, 1870, 952; 1886, 424, ☿ ♀ ♂. U.S.
texanus Buck., Proc. Ent. Soc. Phil. vi, 170. ♀. Tex.

MYRMECOCYSTUS Wesm.

hortusdeorum McCook, Proc. Acad. Nat. Sci. Phil. 1881, 69, 74, pl. 7 (= *melliger*).
melliger Llave (*Formica*); McCook, ibid. 69; Mayr, Verh. z.-b. Ges. 1886, 424. Col. N.Mex.

FORMICA Linn.

aliena Först., Mayr, Verh. z.-b. Ges. 1886, 429 (= var. *Lasius niger*).
americana Buck., Proc. Ent. Soc. Phil. vi, 154, ☿ ♀. Ct.
aphidicola Walsh, ibid. i, 310, ♀ ♂. Ill. (= *Lasius flavus ?*).
arenicola Buck., ibid. vi, 160, ☿. D.C.
aterrima Cress., ibid. iv, 426, ♂. Col.
atra Buck., ibid. vi, 159, ☿. D.C.
atriceps Smith, Brit. Mus. Cat. Hym. vi, 44 (= *Camponotus*).
badia Latr. Hist. Nat. Fourm. 238 (= *Pogonomyrmex*).
brunnea Latr. ibid. 168 (= *Lasius*).
cæspitum Linn., Syst. Nat. i, 963 (= *Tetramorium*).
caryæ Fitch, First N. Y. Rep. 151 (= *Camponotus herculaneus*).
castanea Latr., Hist. Nat. Fourm. 118 (= *Camponotus*).
ciliata Mayr, Verh. z.-b. Ges. Wien, 1886, 428, ♀. Col.
cinerea Mayr, ibid. 1853, 281; 1870, 951 (= var. *fusca*).

clavigera Roger, Berl. Ent. Zeits. 1862, 241 (= *Lasius*).
connecticutensis Buck., Proc. Ent. Soc. Phil. vi, 154, ☿ ♀. Ct.
contructa Latr., Hist. Nat. Fourm. 195, pl. 7, fig. 40 (= *Ponera*).
discolor Buck., Proc. Ent. Soc. Phil. vi, 166 (= *Camponotus marginatus*).
dislocata Say, Bost. Jour. i, 288; Lec. Edit. ii, 733, ♂. Ind.
esuriens Smith, Brit. Mus. Cat. Hym. vi, 54 (= *Camponotus*).
exsectoides Forel, Compt. rend. 1886, xxxviii; Mayr, l. c. 1886, 425. N.H. Ct. Pa.
ferruginea Fabr., Ent. Syst. Suppl. 279 (= *Camponotus herculaneus*).
festinata Buck., Proc. Ent. Soc. Phil. vi, 164, ☿ ♀. Tex.
flava DeGeer, Hist. Ins. ii, 1089 (= *Lasius*).
floridana Buck., Proc. Ent. Soc. Phil. vi, 161 (= var. *Camponotus atriceps*).
fœtida Buck., ibid. 167, ☿ ♀. Tex.
fugax Latr., Hist. Nat. Fourm. 265 (= *Solenopsis*).
fusca Linn., Syst. Nat. i, 963; Mayr, Verh. z.-b. Ges. 1886, 426. U.S. (Eur.)
gagates Latr., Hist. Nat. Fourm. 138, pl. 5, fig. 26 (= var. *fusca*).
gnava Buck., Proc. Ent. Soc. Phil. vi, 156, ☿ ♀ ♂. U.S.
gracilis Buck., ibid. 158, ☿ ♀. N.Y.
herculanea Linn., Syst. Nat. i, 962 (= *Camponotus*).
imparis Say, Bost. Jour. i, 287; Lec. Edit. ii, 732, ♂ ♀. Ind.
insana Buck., Proc. Ent. Soc. Phil. vi, 165 (= *Dorymyrmex pyramica*).
integra Nyl.; Mayr, Verh. z.-b. Ges. Wien, 1886, 425, ☿ ♀ ♂. U.S.
lævigata Smith, Brit. Mus. Cat. Hym. vi, 55 (= *Camponotus*).
lateralis Latr., Hist. Nat. Fourm. 172 (= *Camponotus*).
latipes Walsh, Proc. Ent. Soc. Phil. i, 311 (= *Lasius*).
lauta Say, Bost. Jour. i, 286; Lec. Edit. ii, 731, ♀ ♂. Ind.
ligniperda Latr., Hist. Nat. Fourm. 88 (= var. *Camponotus herculaneus*).
Lincecumii Buck., Proc., Ent. Soc. Phil. vi, 163, ☿ ♀ ♂. Tex.
longicornis Latr., Hist. Nat. Fourm. 113 (= *Prenolepis*).
marginata Latr., ibid. 103 (= *Camponotus*).
masonia Buck., Proc. Ent. Soc. Phil. vi, 165, ☿. Tex.
mellea Say, Bost. Jour. i, 286; Lec. Edit. ii, 731 (= *Camponotus castaneus*).
mellea Prov., Nat. Can. xii, 356; Faun. Ent. Can. ii, 599, ☿. Can.
monticola Buck., Proc. Ent. Soc. Phil. vi, 157, ☿ ♀ ♂. N.Y.
nigra Linn., Syst. Nat. i, 963; Smith, Brit. Mus. Cat. Hym. vi, 52 (= *Lasius*).
Nortonii Buck., Proc. Ent. Soc. Phil. vi, 153, ☿ ♀. Ct.
nova-angliæ Buck., ibid. 153, ☿ ♀. Me.
novæboracensis Fitch, First N. Y. Rep. 62 (= *Camponotus herculaneus*).
obscuripes Forel, Compt.-rend. Soc. Ent. Belg. 1886, xxxix (= var. *rufa*).
obscuriventris Mayr, Verh. z.-b. Ges. Wien, 1870, 951; 1886, 426 (= var. *rufa*).
occidentalis Buck., Proc. Ent. Soc. Phil. vi, 157, ☿ ♀. Ct. N.Y.
pallidefulva Latr., Hist. Nat. Fourm. 174; Mayr, Verh. z.-b. Ges. 1886, 429. N.J.
pallitarsis Prov., Faun. Ent. Can. ii, 598, ♂ ♀. Can.
parva Buck., Proc. Ent. Soc. Phil. vi, 159 (= *Tapinoma sessile*).
pennsylvanica DeGeer, Hist. Ins. iii, 603 (= var. *Camponotus herculaneus*).
perminuta Buck., Proc. Ent. Soc. Phil. vi, 162, ☿ (= *Prenolepis?*).
picea Buck., ibid. 163, ☿ (= *Prenolepis vividula*).
politurator Buck., ibid. 160, ☿. Mich.
pratensis DeGeer; André, Hym. Eur. ii, 184. N.Am. (Eur.)
pubescens Fabr., Ent. Syst. ii, 352 (= *Camponotus*).
rufa Linn.; André, Hym. Eur. ii, 184, pl. ix, fig. 14-16, ☿ ♀ ♂. N.Am. (Eur.)

rufibarbis Fabr., Ent. Syst. ii, 355 (= var. *fusca*).
sanguinea Latr., Hist. Nat. Fourm. 150, pl. 5, fig. 29. N.Am. (Eur.)
san-sabeana Buck., Proc. Ent. Soc. Phil. vi, 167 (= *Camponotus marginatus*).
saxicola Buck., ibid. 166, ☿ ♀. Tex. (= *Lasius?*)
Schaufussi Mayr, Sitz. Ak. Wis. 1866. 493; Verh. z.-b. Ges. 1886, 427, ♀. U.S.
scutellaris Oliv., Enc. Méth. vi, 497 (= *Cremastogaster*).
semipunctata Kirby, Faun. Bor.-Am. iv, 262 (= *Camponotus herculaneus*).
septentrionale Buck., Proc. Ent. Soc. Phil. vi, 161, ☿ ♀. Ill. Mich.
sessilis Say, Bost. Jour. i, 287; Lec. Edit. ii, 732 (= *Tapinoma*).
similis Mayr, Verh. zool.-bot. Ges. Wien, 1886, 425 (= var. *integra*).
subpolita Mayr, ibid. 426 (= var. *fusca*).
subsericea Say, Bost. Jour. i, 289; Lec. Edit. ii. 734 (= *fusca*).
subspinosa Buck. (*Hypochira*), Proc. Ent. Soc. Phil. vi, 169, ☿. Tex.
sylvatica Oliv., Enc. Meth. vi, 491 (= *Camponotus*).
tejonia Buck., Proc. Ent. Soc. Phil. vi, 161, ♂. Cala.
tenuissima Buck., ibid. 162, ☿. Tex.
terricola Buck. (*Tapinoma*), ibid. 168 (= *Prenolepis vividula*).
triangularis Say, Bost. Jour. i, 288; Lec. Edit. ii, 733, ♀ ♂. Ind.
truncicola Nyl.; André, Hym. Eur. ii, 183. N.Am. (Eur.)
umbrata Nyl., Mon. Form. 1048 (= *Lasius*).
virginiana Buck., Proc. Ent. Soc. Phil. vi, 159, ☿. D.C.
vividula Nyl., Mon. Form. 99 (= *Prenolepis*).
wichita Buck. (*Tapinoma*), Proc. Ent. Soc. Phil. vi, 169 (= *Prenolepis nitens*).

LASIUS Fabr.

brunneus Latr. (*Formica*); André, Hym. Eur. ii, 193. N.Am. (Eur.)
claviger Roger (*Formica*), Berl. Ent. Zeits. 1862, 241, pl. i, fig. 13, ♀. U.S.
flavus DeGeer (*Formica*), Hist. Ins. ii, 1089, pl. 42, fig. 24-28. N.Am. (Eur.)
interjectus Mayr, Verh. zool.-bot. Ges. Wien, 1866, 888; 1886, 430. Brit.Am. U.S.
latipes Walsh (*Formica*); Mayr, ibid. 889, pl. 20, fig. 4, ♀. Ill. Wisc.
niger Linn. (*Formica*); André, Hym. Eur. ii, 192, pl. x, fig. 1-3. N.Am. (Eur.)
umbratus Nyl. (*Formica*); Mayr, Verh. z.-b. Ges. Wien, 1886, 430. U.S. (Eur.)

BRACHYMYRMEX Mayr.

Heeri Forel; Mayr, Verh. zool.-bot. Ges. Wien, 1886, 431. U.S. (Eur.)

PRENOLEPIS Mayr.

fulva Mayr, Verh. zool.-bot. Ges. Wien, 1862, 698; 1886, 431. D.C.
longicornis Latr. (*Formica*); Mayr, ibid. 1886, 431. D.C.
nitens Mayr (*Tapinoma*), ibid. 1870, 947; 1886, 431. U.S. (Eur.)
parvula Mayr, ibid. 948 (= var. *vividula*).
vividula Nyl. (*Formica*); André, Hym. Eur. ii, 204, pl. x, fig. 8-10, ☿ ♀ ♂. U.S. (Eur.)

IRIDOMYRMEX Mayr.

MacCooki Forel; Mayr, zool.-bot. Ges. Wien, 1886, 432, ♂ ♀. D.C. Tex.

DORYMYRMEX Mayr.

pyramicus Roger (*Prenolepis*); Mayr, Verh. z.-b. Ges. 1886, 433. U.S. (S.Am.)

LIOMETOPUM Mayr.

microcephalum Panz. (*Formica*); Mayr, Verh. z.-b. Ges. 1886, 434. Cala. (Eur.)

TAPINOMA Först.

boreale Roger, Berl. Ent. Zeits. 1863, 165: Mayr, Verh. zool. bot. Ges. 1886, 434. Fla. Neb.
nitens Mayr, Verh. zool.-bot. Ges. Wien, 1852, 144 (= *Prenolepis*).
sessile Say (*Formica*), Bost. Jour. i, 287; Lec. Edit. ii, 732, ♀. U.S.

DOLICHODERUS Lund.

mariæ Forel; Mayr, Verh. zool.-bot. Ges. Wien, 1886, 437, ♀. N.J. D.C. Va.
plagiatus Mayr (*Hypoclinea*), ibid. 1870, 960, ☿. Ill.
pustulatus Mayr, ibid. 1886, 436, ♀. N.J. D.C. Va.
Taschenbergi Mayr (*Hypoclinea*), ibid. 1870, 958; 1886, 437. ☿. La.

Family ODONTOMACHIDÆ.

ODONTOMACHUS Latr.

clarus Roger, Berl. Ent. Zeits. 1861, 26, ☿. Tex.
hæmatodes Linn. (*Formica*); Mayr, Verh. zool.-bot. Ges. 1886, 437. Ga. Fla. Tex.
texanus Buck., Proc. Ent. Soc. Phil. vi, 335, ☿. Tex.

Family PONERIDÆ.

PONERA Latr.

amplinoda Buck., Proc. Ent. Soc. Phil. vi, 171. Tex.
binodosus Prov. (*Arotropus*), Nat. Can. xii, 205; Faun. Ent. Can. ii, 539. Can.
contracta, Latr. (*Formica*); André, Hym. Eur. ii, 240, pl. xiv. N.Am. (Eur.)
crocea Roger, Berl. Ent. Zeits. 1860, 288, ♀ = (*Proceratium*).
elongata Buck., Proc. Ent. Soc. Phil. vi, 172, ☿. Tex.
gilva Roger. Berl. Ent. Zeits. 1863, 170, ☿. N.Am.
Lincecumii Buck. (*Ectatoma*), Proc. Ent. Soc. Phil. vi, 172, ☿. Tex.
melina Roger, Berl. Ent. Zeits. 1860, 291 (= *Proceratium*).
pennsylvanica Buck., Proc. Ent. Soc. Phil. vi, 171. Pa.
texana Buck., ibid. 170, ☿. Tex.

PROCERATIUM Roger.

croceum Roger (*Ponera*); Mayr, Verh. zool.-bot. Ges. Wien, 1886, 437. Tex.
melina Roger (*Ponera*); Mayr, ibid. 438. Carolina.
silaceum Roger, Berl. Ent. Zeits. 1863, 172, ☿; Mayr, Verh. zool.-bot. Ges. 1886, 437. Tex.

LOBOPELTA Mayr.

septentrionalis Mayr, Verh. zool.-bot. Ges. Wien, 1886, 438, ☿. D.C.

DISCOTHYREA Roger.

testacea Roger, Berl. Ent. Zeits. 1863, 177; Mayr, Verh. zool.-bot. Ges. 1886, 438. N.Am.

AMBLYOPONE Erichs.

pallipes Hald. (*Typhlopone*), Proc. Acad. Nat. Sci. Phil. ii, 54, ☿. U.S.
serratum Roger (*Stigmatomma*), Berl. Ent. Zeits. 1859, 251 (= *pallipes*).

Family **DORYLIDÆ.**

LABIDUS* Jurine.

Harrisii Hald., Stansb. Salt Lake Exp. Append. C, 367, pl. ix, figs. 4-6. Utah, Tex.
Melshaemeri Hald., ibid. 368, pl. ix, figs. 7-9, ♂. Utah, Tex.
minor Cress., Trans. iv, 195; Mayr, Verh. z.-b. Ges. 1886, 441, ♂. Tex. N.Mex.
nigrescens Cress., ibid. 194, ♂. Tex.
Sayi Hald., Stansb. Salt Lake Exp. Append. C, 367, pl. ix, figs. 1-3. Utah, Tex.
subsulcatum Mayr (*Eciton*), Verh. zool.-bot. Ges. Wien, 1886, 440, ♂. Tex.

Family **MYRMICIDÆ.**

ECITON Latr.

californicum Mayr, Verh. zool.-bot. Ges. Wien, 1870, 969, ☿. Cala.
coeca Latr. (*Formica*); Mayr, ibid. 1886, 440. Tex.
Sumichrasti Norton, Proc. Essex Inst. vi, 6; Mayr, l. c. 440. Tex. (Mex.)

ATTA Fabr.

arborea Buck. (*Œcodoma*) Proc. Ent. Soc. vi, 349, ☿ ♀ (= *Cremastogaster lineolata*).
bicolor Buck. (*Œcodoma*), ibid. 350 (= *Cremastogaster læviuscula*).
brazensis Buck., ibid. 345 (= *Aphænogaster*).
coloradensis Buck., ibid. 346, ☿ (= *Solenopsis geminata*).
crudelis Smith, Brit. Mus. Cat. Hym. vi, 170 (= *Pogonomyrmex transversus*).
fervens Say, Lec. Edit. ii, 734; Smith, l. c. 185, pl. x, fig. 20. Tex. (Mex.)
lævis Mayr, Verh. z.-b. Ges. Wien, 1862, 743 (= *Aphænogaster*).
Lincecumii Buck., Proc. Ent. Soc. Phil. vi, 344 (= *Aphænogaster*).
pennsylvanica Buck., ibid. 345 (= *Aphænogaster*).
picea Buck., ibid. 344 (= *Aphænogaster*).
pilosa Buck. (*Œcodoma*), ibid. 348 ☿. Tex.
septentrionalis McCook, Proc. Acad. Nat. Sci. Phil. 1880, 359–363 (= *tardigrada*).
tardigrada Buck. (*Œcodoma*), Proc. Ent. Soc. vi, 349, ☿ ♀ ♂. N.J. Fla. Tex.
tennesseensis Mayr, Verh. z.-b. Ges. Wien, 1862, 743 (= *Aphænogaster*).
texana Buck. (*Œcodoma*), Proc. Ent. Soc. Phil. vi, 347 (= *fervens*).
virginiana Buck. (*Œcodoma*), Proc. Ent. Soc. Phil. vi, 346, ☿. Va.

* The species of this genus are referred by Mayr (Verh. zool.-bot. Ges. Wien, 1886, 440) to *Eciton* Latr.

APHÆNOGASTER Mayr.

albisetosa Mayr, Verh. zool.-bot. Ges. Wien, 1886, 446, ☿. N.Mex.
Andrei Mayr, ibid. 448, ☿. Cala.
brazœnsis Buck. (*Atta*), Proc. Ent. Soc. Phil. vi, 345, ☿. Tex.
brevicornis Mayr, Verh. zool.-bot. Ges. Wien, 1886, 447, ☿ ♀. Va.
fulva Roger, Berl. Ent. Zeits. 1863, 190; Mayr, l. c. 1886, 445, ☿ ♀ ♂. U.S.
lævis Mayr (*Atta*), Verh. z.-b. Ges. Wien, 1862, 743, ♀ (= *tennesseensis*).
lamellidens Mayr, ibid. 1886, 444, ☿ ♀ ♂. Md. Va. Fla.
Lincecumii Buck. (*Atta*), Proc. Ent. Soc. Phil. vi, 344, ☿ ♀. Tex.
marisæ Forel, Compt.-rend. Soc. Ent. Belg. 1886, xli, ☿. Fla.
pennsylvanica Buck (*Atta*), Proc. Ent. Soc. Phil vi, 345, ☿. Pa.
Pergandei Mayr, Verh. zool.-bot. Ges. Wien, 1886, 448, ☿. Cala.
picea Buck. (*Atta*), Proc. Ent. Soc. Phil. vi, 344, ☿. Tex.
sabeana Buck. (*Myrmica*), ibid. 343, ☿. Tex.
sublanuginosa Buck. (*Myrmica*), ibid. 343, ☿. Tex.
subrubra Buck. (*Myrmica*), ibid. 336, ☿ ♀. D.C. Va.
tennesseensis Mayr (*Atta*), Verh. z.-b. Ges. Wien, 1862, 743; 1886, 446. U.S.
treatæ Forel, Compt.-rend. 1886, xl; Mayr, Verh. z.-b. 1886, 444. N.J. Md. Va.

POGONOMYRMEX Mayr.

badius Latr. (*Formica*); Mayr, Verh. z.-b. Ges. 1870, 971; 1886, 450. Can. Cala.
barbatus Smith (*Myrmica*); Mayr, ibid. 971; 1886, 449. Tex. N.Mex. Ariz.
brevipennis Smith (*Myrmica*); Mayr, ibid. 1886, 450. Ga. (= *transversus*?).
occidentalis Cress. (*Myrmica*), Proc. Ent. Soc. Phil. iv, 426, ☿ ♀. Col. Tex.
opaciceps Mayr, Verh. zool.-bot. Ges. Wien, 1870, 971, ☿ (= *occidentalis*).
subdentatus Mayr, ibid. 971, ☿. Ct. Cala.
transversus Smith (*Myrmica*); Mayr, ibid. 1886, 450. Fla. Ga.

MYRMICA Latr.

aquia Buck., Proc. Ent. Soc. Phil. vi, 341 (= *Aphænogaster fulva*).
atra Buck., ibid. 342 (= *Monomorium*).
barbata Smith, Brit. Mus. Cat. Hym. vi, 130 (= *Pogonomyrmex*).
bicarinata Nyl.; Smith, ibid. 130. Cala. (Eur.)
brevipennis Smith, ibid. 130 (= *Pogonomyrmex*).
californica Buck., Proc. Ent. Soc. Phil. vi, 336, ☿. Cala.
carbonaria Smith, Brit. Mus. Cat. Hym. vi, 127 (= *Monomorium minutum*).
cerasi Fitch, First N. Y. Rep. 130 (= *Cremastogaster*).
coeca Buck., Proc. Ent. Soc. Phil. vi, 339 (= *Monomorium*).
columbiana Buck., ibid. 340 (= *Cremastogaster lineolata*).
corrugata Say, Bost. Jour. i, 291; Lec. Edit. ii, 735, ☿ ♀. Ind.
dimidiata Say, ibid. 293; Lec. Edit. ii, 737, ♀ ♂. U.S.
diversa Buck., Proc. Ent. Soc. Phil. vi, 337 (= *Monomorium*).
exigua Buck., ibid. 342 (= *Tetramorium*).
incompleta Prov., Nat. Can. xii, 359; Faun. Ent. Can. ii, 602, ☿ ♀ ♂. Can.
inflecta Say, Bost. Jour. i, 292; Lec. Edit. ii, 736, ♂. Ind.
lævinodis Nyl.; André, Hym. Eur. ii, 316, pl. xxi, fig. 1, ☿ ♀ ♂. N.Am. (Eur.)
lineolata Say, Bost. Jour. i, 290; Lec. Edit. ii, 734 (= *Cremastogaster*).
lineolata Buck., Proc. Ent. Soc. Phil. vi, 340 (= *Monomorium*).

labicornis Nyl.; André, Hym. Eur. ii, 318; McCook, Proc. Acad. 1879, 140, ☿ ♀ ♂ (= var. *scabrinodis*).
marylandica Buck., Proc. Ent. Soc. Phil. vi, 339 (= *Cremastogaster lineolata*).
minima Buck., ibid. 338 (= *Monomorium*).
minuta Say, Bost. Jour. i, 294; Lec. Edit. ii, 738, ☿. Ind.
molesta Say, ibid. 293; Lec. Edit. ii, 737 (= *Monomorium*).
molifaciens Buck. (*Monomorium*), Proc. Ent. Soc. Phil. vi, 348 (= *Pogonomyrmex barbatus*).
montana Buck., ibid. 339 (= *Monomorium*).
novæboracensis Buck., ibid. 337 (= *Cremastogaster lineolata*).
occidentalis Cress., ibid. iv, 426 (= *Pogonomyrmex*).
opposita Say, Bost. Jour. i, 292; Lec. Edit. ii, 736 ☿ ♂. N.Am.
punctiventris Roger, Berl. Ent. Zeits. 1863, 190; Mayr, Verh. z.-b. Ges. 1886, 450. N.J. Va.
ruginodis Nyl.; Mayr, Verh. zool.-bot. Ges. Wien, 1886, 450 (= var. *lævinodis*).
rubra Buck., Proc. Ent. Soc. Phil. vi, 335, ☿. Tex.
sabeana Buck. (*Atta*), ibid. 343 (= *Aphænogaster*).
saxicola Buck., ibid. 341 (= *Monomorium*).
scabrata Buck. (*Diplorhoptrum*), ibid. 343 (= *Solenopsis*).
scabrinodis Nyl.; Mayr, Verh. zool.-bot. Ges. Wien, 1886, 451. Brit.Am. U.S.
seminigra Cress., Proc. Ent. Soc. Phil. iv, 427 (= *Pogonomyrmex occidentalis* ♂).
sublanuginosa Buck. (*Atta*), ibid. vi, 343 (= *Aphænogaster*).
subrubra Buck., ibid. 336 (= *Aphænogaster*).
sulcinodis Nyl.; Mayr, Verh. zool.-bot. Ges. Wien, 1886, 451. N.J.
texana Buck., Proc. Acad. Nat. Sci. Phil. 1860, 233 (= *Atta fervens*).
transversa Smith, Brit. Mus. Cat. Hym. vi, 129 (= *Pogonomyrmex*).
tuberum Fabr.; Prov., Faun. Ent. Can. ii, 602, ☿ ♀ ♂. Can. (Eur.)

LEPTOTHORAX Mayr.

curvispinosus Mayr, Sitz. Ak. Wis. 1866, 508; Verh. z.-b. Ges. 1886, 453. D.C. Va.
fortinodus Mayr, Verh. zool.-bot. Ges. Wien, 1886, 452, ☿ ♀. Md. D.C.
longispinosus Roger, Berl. Ent. Zeits. 1863, 180, ☿; Mayr, Verh. z.-b. 1886, 453. D.C. Va.
pilifer Roger, ibid. 180, ☿; Mayr, Verh. z.-b. Ges. 1886, 453. Pa.
Schaumii Roger, ibid. 180, ☿; Mayr, Verh. z.-b. Ges. 1886, 453, ♂. Pa. D.C.

TETRAMORIUM Mayr.

cæspitum Linn. (*Formica*); André, Hym. Eur. ii. 285, pl. xix. N.Am. (Eur.)
exiguum Buck. (*Myrmica*), Proc. Ent. Soc. Phil. vi, 342, ☿ ♀. D.C.
guineense Fabr. (*Formica*); Mayr, Verh. z. b. Ges. 1886, 453. D.C. Fla. La. (Eur.)

STENAMMA Westw.

gallarum Patton, Am. Nat. xiii, 1879, 126, ☿ ♀ (= *Leptothorax curvispinosus*).
neoarcticum Mayr, Verh. zool. bot. Ges. 1886, 454, ☿ ♀ ♂. N.H. Va. Cala.

MYRMECINA Curtis.

Latreillii Curtis; André, Hym. Eur. ii, 275, pl. xvii, figs. 7–9. N.Am. (Eur.)

MONOMORIUM Mayr.

atrum Buck. (*Myrmica*), Proc. Ent. Soc. Phil. vi, 342, ☿. D.C.
coeca Buck. (*Myrmica*), ibid. 339. Tex.
diversum Buck. (*Myrmica*), ibid. 337, ☿ ♀. Tex.
lineolatum Buck. (*Myrmica*), ibid. 340, ☿ ♀.
minutum Buck. (*Myrmica*), ibid. 338, ☿ ♀. Tex.
minutum Mayr, Verh. zool.-bot. Ges. Wien, 1886, 455. U.S. (Eur.)
molesta Say (*Myrmica*), Bost. Jour. i, 293; Lec. Edit. ii, 737. N.Am. (Eur.)
montanum Buck. (*Myrmica*), Proc. Ent. Soc. Phil. vi, 339, ☿. Tex.
pharaonis Linn. (*Formica*); Mayr, Verh. z. b. Ges. 1886, 455. U.S. (Eur.)
saxicola Buck. (*Myrmica*), Proc. Ent. Soc. Phil. vi, 341. Tex.

PHEIDOLE Westw.

bicarinata Mayr, Verh. zool.-bot. Ges. Wien, 1870, 989, ♂. Ill.
californica Mayr, ibid. 984, ☿, 987, ♂. Cala.
commutata Mayr, ibid. 1886, 459, ☿. Fla.
dentata Mayr, ibid. 457 (= var. *Morrisi*).
Morrisi Forel, Compt.-rend. 1886, xlvi; Mayr, Verh. z.-b. 1886, 457. U.S.
pennsylvanica Roger, Berl. Ent. 1863, 199; Mayr, Verh. z.-b. 1886, 455. U.S.
vinelandica Forel, Compt.-rend. 1886, xlv; Mayr, Verh. z.-b. 1886, 458. N.J. Va.

SOLENOPSIS Westw.

debilis Mayr, Verh. zool.-bot. Ges. Wien, 1886, 461, ☿ ♀ ♂. N.J. D.C. Va.
fugax Latr. (*Formica*); André, Hym. Eur. ii, 388, pl. xxiv. N.Am. (Eur.)
geminata Fabr. (*Atta*); Mayr, Verh. z.-b. Ges. 1886, 460. Fla. Ala. La. Cala.
madara Roger, Berl. Ent. Zeits. 1863, 200; Verzeichniss, 32, ☿. N.Am.
scabrata Buck. (*Myrmica*), Proc. Ent. Soc. Phil. vi, 343, ☿. Ct.
sulfurea Roger (*Diplorhoptrum*), Berl. Ent. Zeits. 1862, 296, ☿. N.Am.
tenuis Mayr, Verh. zool.-bot. Ges. Wien, 1886, 462. Fla.
xyloni McCook; Hubbard, Orange Ins. 129. fig. 51 (= *geminata*).

CREMASTOGASTER Lund.

Ashmeadi Mayr, Verh. zool.-bot. Ges. Wien, 1886, 463, ☿ ♂. Va. Ga.
cerasi Fitch (*Myrmica*), First N. Y. Rep. 130, ☿. N.Y. (= *lineolata*?)
clara Mayr, Verh. zool.-bot. Ges. Wien, 1870, 993 (= *læviuscula*).
coarctata Mayr, ibid. 992 (= *lineolata*).
læviuscula Mayr, ibid. 993, ☿; 1886, 463. U.S.
lineolata Say (*Myrmica*); Mayr, ibid. 1886, 462; Hub., Or. Ins. 170, fig. 79. U.S.
minutissima Mayr, ibid. 1870, 991, 995, ☿ ♀. S.C. Tex.
scutellaris Oliv. (*Formica*); André, Hym. Eur. ii, 392, pl. xxv, figs. 1–3, ☿ ♀ ♂. N.Am. (Eur.)

PSEUDOMYRMA Guér.

pallida Smith, Trans. Ent. Soc. Lond. new ser. iii, 160, ☿. Fla.

STRUMIGENYS Smith.

clipeata Roger, Berl. Ent. Zeits. 1863, 213, ☿. La.
louisianæ Roger, ibid. 211, ☿. La.

Family MUTILLIDÆ.

PSAMMOTHERMA Latr.

ajax Blake, Trans. Am. Ent. Soc. iii, 226; xiii, 193, ♂. Fla.

MUTILLA Linn.

ægina Cress., Proc. Ent. Soc. Phil. iv, 435 (= *Sphærophthalma*).
arata Cress., Trans. Am. Ent. Soc. v, 120 (= *Sphærophthalma*).
asopus Cress., Proc. Ent. Soc. Phil. iv, 435 (= *Sphærophthalma*).
aspasia Blake, Trans. Am. Ent. Soc. vii, 250 (= *Sphærophthalma*).
auraria Blake, ibid. 248 (= *Sphærophthalma*).
aureola Cress., Proc. Ent. Soc. Phil. iv, 386 (= *Sphærophthalma*).
bellona Cress., ibid. 434 (= *Sphærophthalma*).
bifasciata Swed.; Smith, Brit. Mus. Cat. iii, 58, ♂. N.Y.
bioculata Cress., Proc. Ent. Soc. Phil. iv, 431 (= *Sphærophthalma*).
briaxus Blake, Trans. Am. Ent. Soc. iii, 227; xiii, 195. ♂ (= var. *hexagona*).
californica Rad.; Cress., Proc. Ent. Soc. Phil. iv, 432 (= *Sphærophthalma*).
caneo Blake, Trans. Am. Ent. Soc. vii, 250 (= *Sphærophthalma*).
castanea Cress., Proc. Ent. Soc. Phil. iv, 388 (= *Photopsis*).
clara Cress., ibid. 439 (= *Photopsis*).
clio Blake, Trans. Am. Ent. Soc. vii, 251 (= *Sphærophthalma*).
coccinea Fabr., Ent. Syst. ii, 366 (= *Sphærophthalma occidentalis*).
concolor Cress., Proc. Ent. Soc. Phil. iv, 439 (= *Photopsis*).
connectens Cress., ibid. 387 (= *Sphærophthalma*).
contracta Say, Lec. Edit. ii, 738; Blake, Trans. iii, 256; xiii, 198, ♂. Ark. Mo.
contumax Cress., Proc. Ent. Soc. Phil. iv, 437 (= *Sphærophthalma*).
copano Blake, Trans. Am. Ent. Soc. iii, 232; xiii, 205, ♂. Tex.
creusa Cress., Proc. Ent. Soc. Phil. iv, 431 (= *Sphærophthalma*).
dubitata Smith, Brit. Mus. Cat. Hym. iii, 60; Blake, Trans. xiii, 201, ♀. U.S.
Edwardsii Cress., Trans. Am. Ent. Soc. v, 119 (= *Sphærophthalma*).
electra Blake, ibid. iv, 75 (= *Sphærophthalma*).
erato Blake, ibid. vii, 251 (= *Sphærophthalma*).
erudita Cress., ibid. v, 120 (= *Sphærophthalma*).
euterpe Blake, ibid. vii, 249; xiii, 201, ♀. Fla.
eximia Blake, ibid. xiii, 200, ♂. Ariz.
exulans Fabr., Ent. Syst. ii, 368; Blake, Trans. Am. Ent. Soc. xiii, 280. N.Am.?
fenestrata St. Farg., Hym. iii, 627 (= *Sphærophthalma*).
ferrugata Fabr., Syst. Piez. 438 (= *Sphærophthalma*).
floridana Blake, Trans. Am. Ent. Soc. iii, 245; xiii, 197, ♀. Fla.
floridensis Blake, ibid. vii, 249; xiii, 199, ♂. Fla.
frigida Smith, Brit. Mus. Cat. Hym. iii, 60 (= *Sphærophthalma*).
fulvohirta Cress., Proc. Ent. Soc. Phil. iv, 433 (= *Sphærophthalma*).
gibbosa Say, Bost. Jour. i, 298; Lec. Edit. ii, 741 (= *Sphærophthalma*).
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